American Perfumer AND AROMATICS

COSMETICS
TOILETRIES
SOAPS

•

FLAVORS
AEROSOLS

•

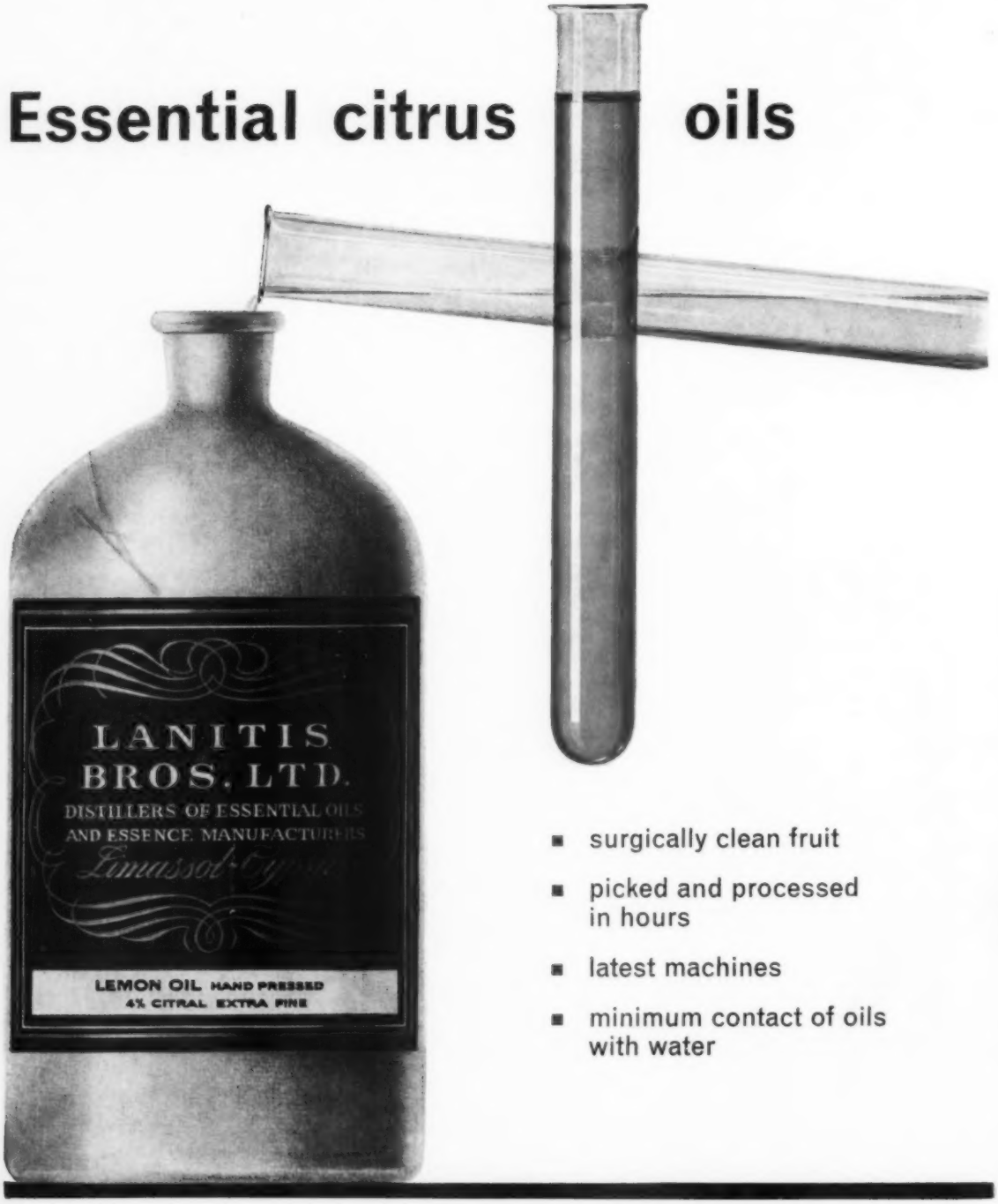
ESSENTIAL OILS

FEBRUARY 1960

THE MAGAZINE OF TASTE AND SCENT

Canadian Cosmetic Patents . . . Page 27 • Latest Russian Drugs . . . Page 49

Essential citrus oils



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- minimum contact of oils with water

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Hair sprays
Personal deodorants
Suntan preparations
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American Perfumer
AND AROMATICS

VOL. 75, NO. 2 FEBRUARY, 1960

Contents

RESEARCH

Plastics for Convenience Packaging ..... *W. B. Tibbets* 30
Meat Tenderizers ..... *Otmar Silberstein* 41
The Latest Russian Drugs ..... *Robert M. Leonard, Ph.D.* 49
The Therapeutic Potentialities of Triglycerides .... *S. G. Knight* 55
Evaluation of Deposits from Pressurized Sprays *A. H. Yeomans* and *R. A. Fulton* 58

MANAGEMENT

Canadian Cosmetic Patents ..... *M. J. Marcus* 27
"Donomen"—A New Nomenclature System for Chemicals and Pharmaceuticals ..... *E. C. S. Little* 34
Soap and Glycerine Producer's Assn. 43

DEPARTMENTS

News 9, 69
Desiderata 19
Questions and Answers ... 12
New Products 63
Packaging and Promotion . 60
Index to Advertisers 84

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COVER: Heather Lodge in winter. Mount Revelstoke National Park, British Columbia, Canada. Photo courtesy Canadian Gov't Travel Bureau.

Please address all mail to: AMERICAN PERFUMER AND AROMATICS, 48 West 38th St., New York 18, New York, U.S.A.
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Industry Voice

In a year that is resounding with the ominous overtones of the congressional hearings dealing with alleged profiteering by the drug manufacturers, and pending color tolerance legislation dealing with the use of so-called carcinogens, let us remember that the best way of making our position known is by speaking out through the pages of the trade press, the voice and the pulse of the industry it serves. Only when the many facets of an industry are considered, can a just plan of action be formed.

The editors of the trade press are continually aware of the right and the need of the industry to "have its say," and invite the use of the trade publication as a sounding board, to assure that the industry stand will be a united stand; one voice, loud in the ears of those who attempt to berate, restrict, or condemn.

James H. Moore, Jr.
Publisher

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basic ingredient for anti-perspirants and deodorants

Available in five forms; granular, fine, medium, impalpable and 50% W/W solution – used in creams, lotions, sprays and powders.

Chlorhydrol – (aluminum chlorhydroxide complex) is non-destructive to fabrics . . . non-irritating to skin . . . requires no buffering. Its freshening, astringent properties make it a valuable addition to a wide range of external body products.

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A unique and outstanding Givaudan creation, JASMONIS reigns supreme as a jasmin specialty.

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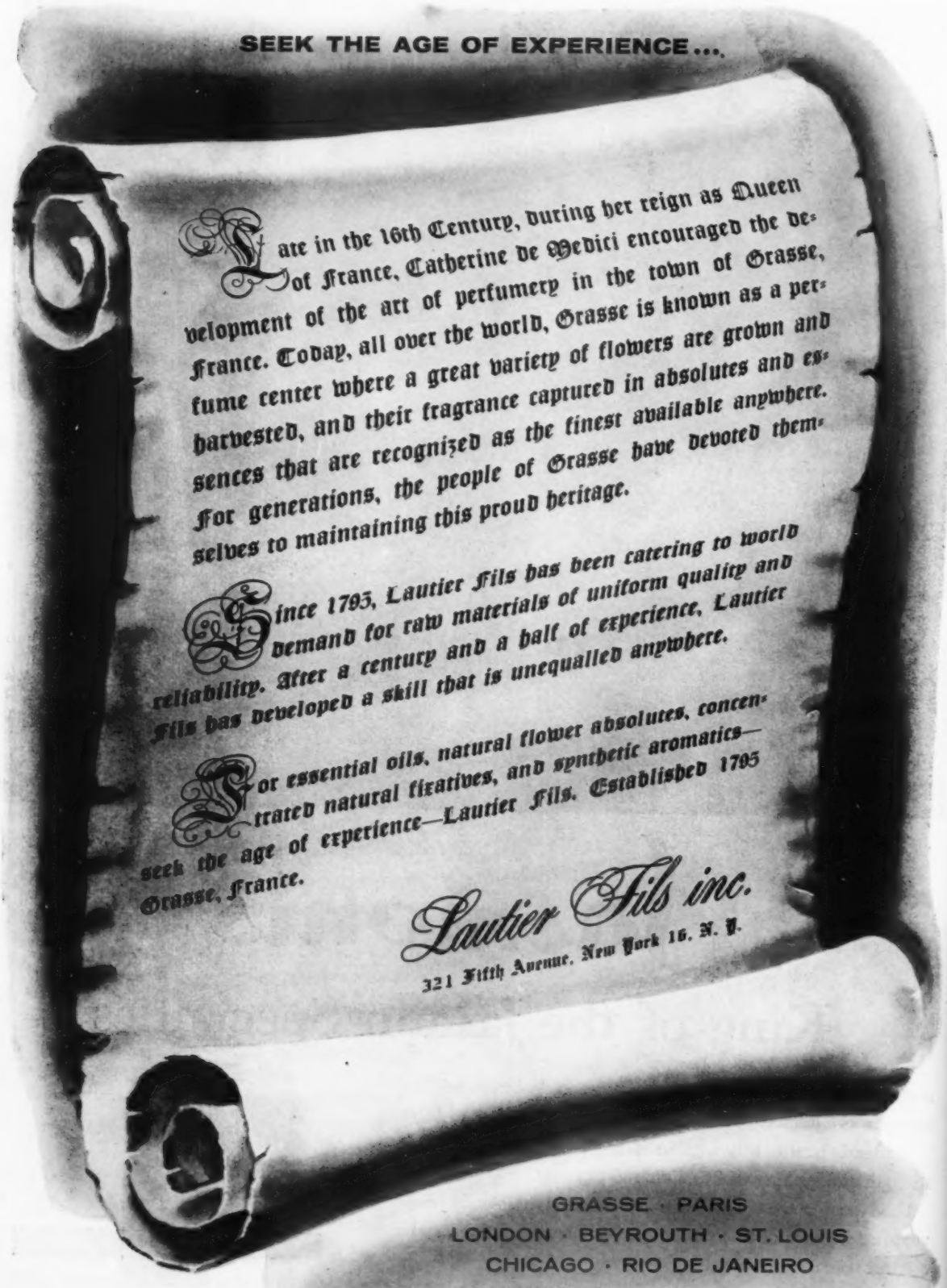
SEEK THE AGE OF EXPERIENCE...
Late in the 16th Century, during her reign as Queen of France, Catherine de Medici encouraged the development of the art of perfumery in the town of Grasse, France. Today, all over the world, Grasse is known as a perfume center where a great variety of flowers are grown and harvested, and their fragrance captured in absolutes and essences that are recognized as the finest available anywhere. For generations, the people of Grasse have devoted themselves to maintaining this proud heritage.
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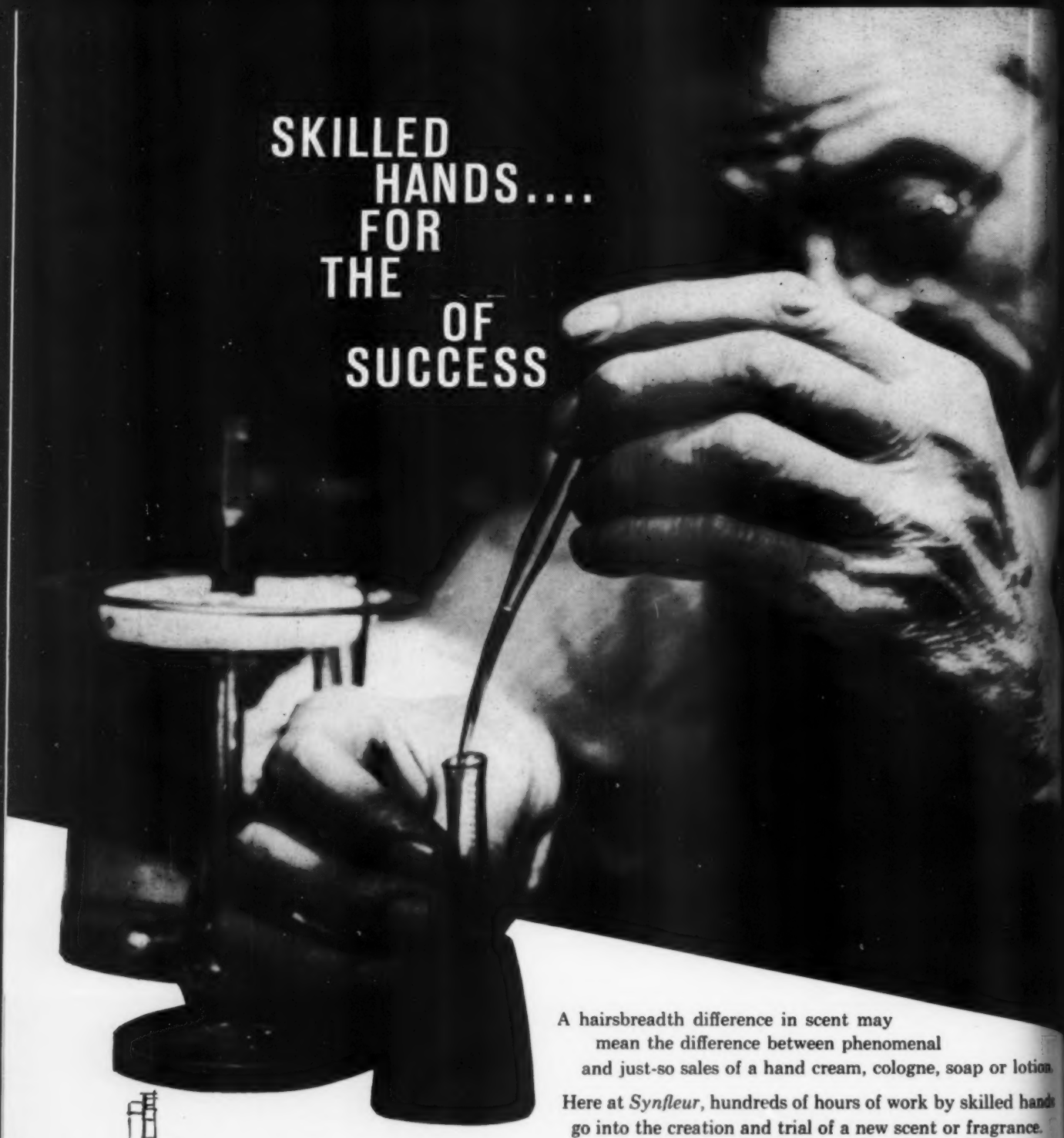

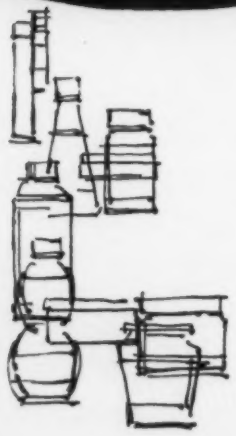

A hairsbreadth difference in scent may mean the difference between phenomenal and just-so sales of a hand cream, cologne, soap or lotion.

Here at *Synfleur*, hundreds of hours of work by skilled hands go into the creation and trial of a new scent or fragrance. We originate and develop new formulas and perfume specialties of every type to solve the special needs and problems of our customers.

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LAST MINUTE NEWS . . .

Breck Adds Weekly Western TV Series

John H. Breck, Inc. is a participating sponsor of the new hour-long TV series, "Overland Trail," carried over the full NBC/TV network Sundays from 7-8 P.M. beginning this month. This new Breck TV activity is in addition to its present exclusive sponsorship of the "Breck Sunday Showcase" series of monthly television "Specials" also being telecast nationwide. "Overland Trail, which had its premiere on February 7, stars William Bendix, and co-stars Doug McClure.

Theme of "Overland Trail" concerns episodes from the history of the Overland Stage Lines which ran from St. Louis, Missouri to Sacramento, California prior to 1870. Bendix portrays the hard bitten, tough, superintendent Kelly of the Stagecoach Company, while Doug McClure plays "Flip" Flipper, his scrappy, adventurous young aide.

Scheduled to be advertised via "Overland Trail" are Breck Banish Treatment Shampoo and Breck Children Shampoo.

Heyden Newport Arranges 17.5 Million Loan

Simon Askin, president of Heyden Newport Chemical Corp. announces that the company has completed arrangements to place with The Prudential Insurance Company of America $17,500,000 of the Company's 5⅞% notes due July 1, 1982.

Of this amount, $10,000,000 will be sold to Prudential on or before April 30, 1962, and the remaining $7,500,000 on or before April 30, 1963.

Mr. Askin stated that the major portion of the funds will be applied to the Company's expansion program, and provision will also be made for the future redemption of part of the Company's existing notes.

Lentheric Marks 75th Year At Sales Convention

Lentheric soared into the '60's with a spectacular sales convention held in the Palmer House in Chicago. It included everything from giant size ice molds of two of Lentheric's famous perfume bottles, Tweed and Miracle, to the introduction of a new bath line to be known as Bain D'Or. Sales Manager, William P. Vailey launched the meeting with a 75th Anniversary dinner party, at which time the men toasted Lentheric's birthday year and were given "teasers" of several coming events (a gold car key and a handsome Izod sportshirt). The following day the announcement was made of a Father's Day fashion promotion for Kings Men, tieing in with Izod and Celanese. Also, in honor of the anniversary year, a salesmen's contest is planned, with the top prize being a Renault Dauphine. Announcement was also made of the largest advertising schedule in Lentheric's history.

Colgate-Palmolive Acquires S. M. Edison Chemical Co.

The Colgate-Palmolive Co. announces that it has acquired the S. M. Edison Chemical Co., Inc. of Chicago. The acquisition was accomplished by means of an exchange of stock. Edison's principal product is "Dermassage," a well-known, non-alcoholic, medicated body lotion widely used in hospitals and also sold to the public through retail drug outlets. The company also manufactures surgical instrument cleansers and other specialty products. The business was founded in 1932 by Dr. S. M. Edison who will continue to be associated with the concern. It is contemplated that the company will operate along present lines as a wholly-owned subsidiary of Colgate.

Fair Trade Law Passage Efforts Renewed

With the convening of the second session of the 86th Congress this week, proponents of fair trade are optimistically renewing their efforts to gain enactment of the Harris and Humphrey-Proxmire National Fair Trade Bills. At the close of the last session of Congress, the two bills were left pending in the House Rules Committee and the Senate Sub-Committee on Interstate and Foreign Commerce, respectively. Veteran legislative campaigners believe that the national fair trade bills can be passed by Congress, if supporters, in large enough numbers, tell their Representatives and Senators how they feel about fair trade.

Drug Executive Answers Excessive Profiteering Charges

Norman J. Longfellow, president of Spence McCord Drug Co., has compiled an impressive list of facts which present a more realistic view of the alleged drug profiteering now being investigated. These are some of the facts listed by Mr. Longfellow:

1. The average prescription in the U.S. in 1958 cost from $2.49 to $2.93
2. In 1958 Americans spent an average of $55 for alcohol, $34 for tobacco and $12 for prescription drugs
3. The average family spends more on automobile maintenance than that spent for drugs by 33 families
4. Life expectancy largely because of new drugs, has increased 10 years since 1929
5. The average family needs $750 worth of drugs in a lifetime—⅓ the cost of a small new car
6. Hospital stays have been reduced from 13.9 days to 8 days since 1958
7. Pneumonia in 1930 cost a patient $1,000 in care and drugs—Today $25

*8. Average profit of leading drug manufacturer in 1958 was 10-11%. Average profit of retail drug stores was 4.3 of gross sales—while required to carry hundreds of life-saving products to save his community at a minutes notice night and day, he provides a professional service to physician and public alike. The wholesale druggists' net in this period dropped .03 to an average of 2%, while he carried a tremendous stock from 1,100 manufacturers on hand. Each drug must be ready on hourly call from physician, druggist and hospital, all at a profit of 2%

People

Anton G. Kettel has been named operations manager and John L. Watters, M. D. medical director of J. B. Roerig and Co., pharmaceutical division of Chas. Pfizer & Co. . . . Yardley has promoted Elizabeth Koller to department store supervisor in the Middle West. Mary Chandler joins the company in the same capacity on the east coast. . . . Mortimer A. Fisher has been appointed assistant to the president of Sun Chemical Corp. . . . Barbara Factor, niece of Max Factor, is a new beauty advice columnist for Seventeen Magazine. The column is titled "Let's Get Pretty." . . . Walther H. Feldmann has been elected a member of the board of directors of The Babcock & Wilcox Co. . . . George E. Shepherd has been appointed Manager in charge of a newly established sales district for General Electric's Silicone Products Department. . . . Century Chemical Corp. has announce the appointment of William O. Blesse as vice president, manufacturing. . . . Charles S. Rowe, Jr. has been appointed assistant manager of Atlas Powder Co.'s Chicago Region chemicals sales office.

for Market Acceptance of your product .... check first with Ver

One of the most difficult opinions to develop in early testing, is whether, in continued use, the interpretation has been correct.

Expert panel-test questionnaires are worked on exhaustively in the hope that they will reflect all phases of the problem.

Our Fragrance suggestions are the result of group appreciation and group familiarity with the problem at hand; this is a plus factor *available to you.*

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10 RUE PERGOLESE, PARIS 10, FRANCE

• Synthetic Aromatic Produc ates • Bouquets and Finished Compositions
• Synthetic F romatic Bases • Essential Oils

Questions and Answers

1365: SKUNK MUSK

Q. *Is skunk musk being used in the manufacture of perfumes? Where might I get information on methods and markets for skunk musk? V. M., Colorado.*

A. We suggest you contact the Sparhawk Company in Sparkhill, New York, for further information on "skunk musk."

1366: PROTEIN HYDROLYSATES

Q. *What is Vericrest and Veripon made by the Protean Chemical Corp? From what we can gather it is similar to human hair and skin and is said to give body to the hair and recondition same. Can you give me information on this as I cannot find it in the INTERNATIONAL ENCYCLOPEDIA OF COSMETIC MATERIAL TRADE NAMES? Are there any other firms putting this out? S. P., Arizona.*

A. The products Vericrest and Veripon are protein hydrolysates of some type. They may be derived from hair or leather scrap. In this connection they are somewhat related to hair, and we believe are sold for the purpose of "reconditioning" hair. The materials were not mentioned in the "Encyclopedia" because they came on the market after the book had gone to press. We regret we do not know of any other source of a similar product.

1367: CARAMEL

Q. *We wish information on a manufacturing process for caramel flavoring. The Organic Chemicals and Drugs Branch, U. S. Department of Commerce, has given us the name of your company suggesting that we write inquiring about books which you might have published covering this subject. Any information which you have available will be appreciated. I. D. R., Wis.*

A. The number of books listing formulas for flavoring agents is exceedingly limited. Most of them are published in a foreign language. You might try the book by Walter entitled ESSENCE INDUSTRY which lists some formulas for the manufacture of caramel flavoring. This book can be obtained from the Continental Press, 14812 Alma Ave., Detroit 5, Michigan, or from the AMERICAN PERFUMER Book Department.

From time to time suggestions have been and will be made in this magazine with respect to processes, devices, materials, appliances, equipment and the like. It is not practicable for the writers and editors to have a patent search or examination made in connection with each such suggestion. Our readers are, therefore, requested and indeed urged to determine for themselves whether any patent or other right will be violated before acting on any such suggestion.

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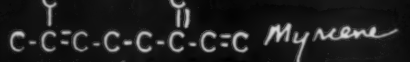
ANNOUNCING

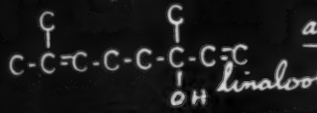
β-Pinene

Pyrolysis



Myrcene

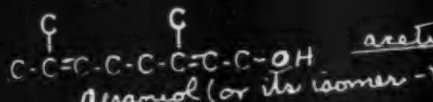
hydrate



linalool

acetylate → linalyl acetate

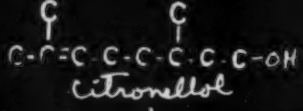
or



geraniol (or its isomer - nerol)

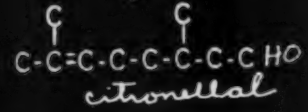
acetylate → geranyl acetate

hydrogenate



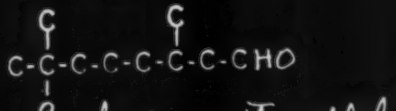
citronellol

dehydrogenate



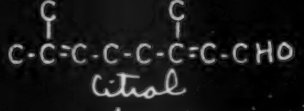
citronellal

hydrate



hydroxycitronellal

dehydrogenate



citral

condense with acetone

pseudoionone

cyclize

alpha- and beta-ionones

Dec 11, 1959

A NEW AND CERTAIN SOURCE OF AROMATIC CHEMICALS

The Glidden Company and Firmenich Incorporated have now joined to provide synthetic aromatic chemicals from a source in unlimited domestic supply.

New and patented developments by the organic chemists of The Glidden Company have now made it possible to produce *synthetically* the aromatic chemicals previously obtained from remote natural sources. These newly derived materials offer manufacturers a series of important advantages.

Most important of these advantages is freedom from the supply, quality, and price fluctuations which are characteristics of natural aromatic oils. The raw material utilized in these processes assures that these synthetically produced "natural" products will continue to be readily available in unlimited quantities on a realistic and stabilized cost basis.

Another major advantage is the purity these new processes make possible. Since they involve the conversion of pure ten carbon atom hydrocarbons to such products as linalool, geraniol, and citronellol which are ten carbon atom *alcohols*, no strange products appear in the reaction and it is possible to achieve a purity entirely impractical with isolates of essential oils. "High off-odor values" are practically eliminated. The perfumer, freed from the limitations imposed by undesirable and unpredictable side elements occurring in natural products, may modify the basic pure material to achieve whatever fragrance notes he desires.

Developed with the technical collaboration of Firmenich, who for more than seventy years has been a world leader in the supply of flavors and fragrances and among whose associates are a Nobel Prize laureate and 4 ACS-administered award recipients, these new aromatics are being manufactured by The Glidden Company and will be distributed exclusively throughout the United States and Canada by Firmenich Inc. Terpenic aromatics now available include: geraniol, linalool, citronellol and their esters. For further information on this revolutionary new development write Firmenich Inc., 250 West 18th Street, New York 11, New York.

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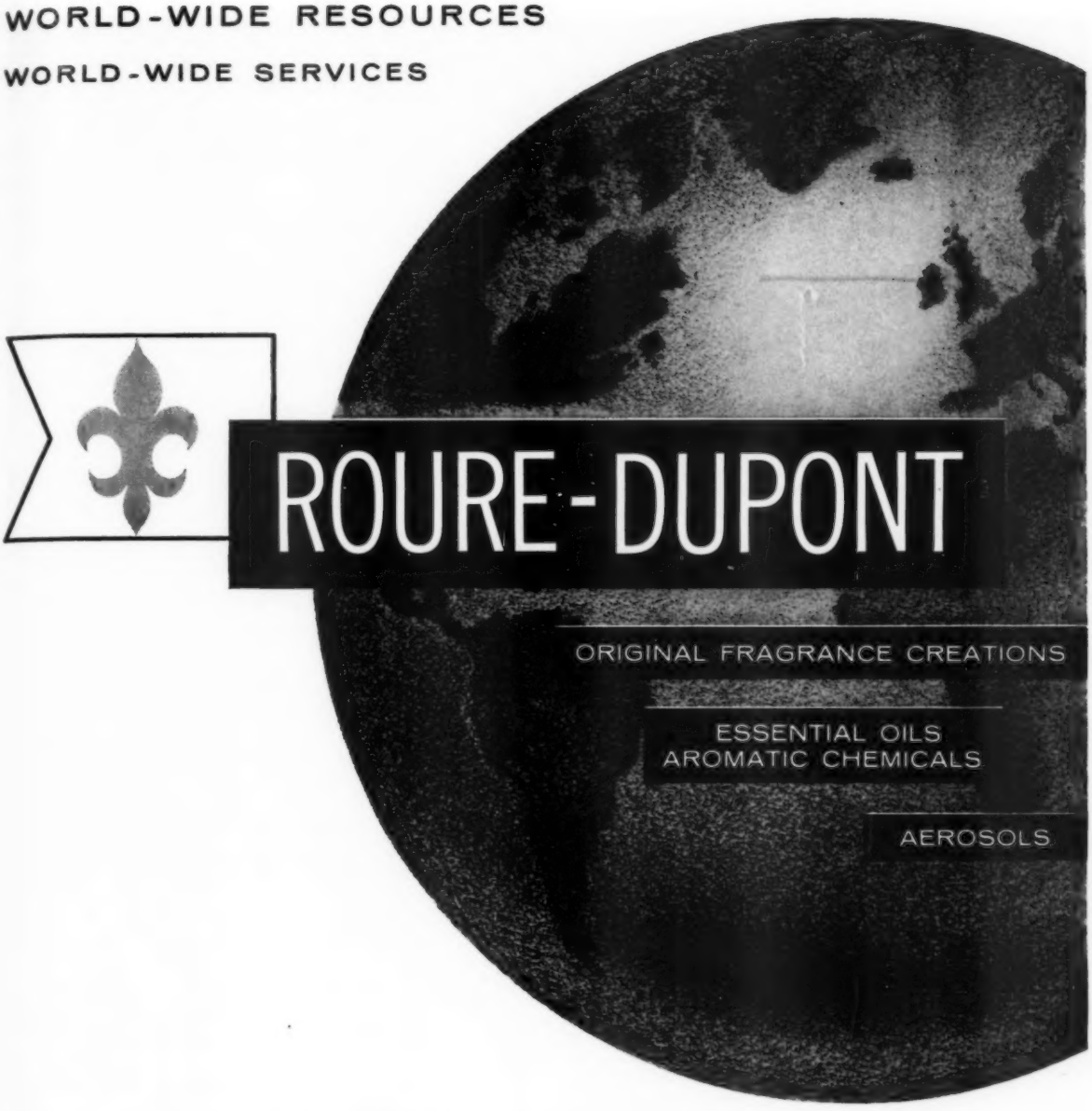
WORLD-WIDE SERVICES



Roure-Bertrand Fils, Grasse, and Justin Dupont, Argenteuil, France, as well as their facilities in North Africa, India, the Far East and South America, have for decades been prime processors of basic ingredients for the perfumers of the world.

Their creative genius is attested by the many proven international successes in the field of fragrance requirements . . . be it in the development of original perfumes, colognes, aerosols, cosmetics, soaps and other toiletries . . . or in the masking area where odors have to be covered rather than developed.

Roure-Dupont, Inc. technical staff is in a unique position to put its vast international facilities and know-how at your disposal.

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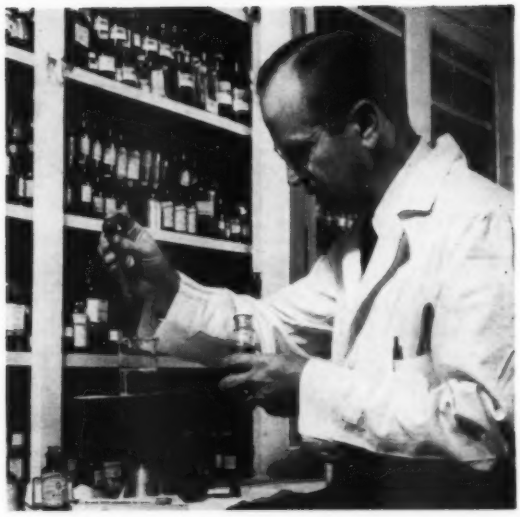
DESIDERATA



Maison G. deNavarre, M.S., F.A.I.C.

S. C. C. European Tour and Seminars

Although the Bob Kramer Travel Agency will not be handling it, plans are afoot to have another series of seminars with European Societies of Cosmetic Chemists.

It looks like late August for the tour, by popular request. We have been asked to come to Switzerland, Germany and Spain. Spain may not work out because it is the hottest time of the year.

In any event, start making your plans for these scientific meetings, travelling with the tour group. Lots of side trips, excursions and entertainment to break the monotony and give your seat a break. Plenty of interesting things for the ladies, too.

Cancer

Since our Yankee temperament causes us to breathe hot or cold on most subjects, it is interesting to note the reaction of the "man in the street" to the latest report of the U. S. Public Health Service on the relationship of smoking to lung cancer. In mentioning this relationship to friends who do smoke, the average response is "so what? You have to die from something." Then I ask them about the cranberry deal and the possible carcinogenicity of the insecticide, and they think "it is terrible."

In the one case people don't care to be protected. In the other case, they do. So, how does Congress write a law that does both?

Polypeptide Fatty Amides

It was high time a paper on these surfactants was given to bring the subject up to date. As you know, they are known in the trade as Maypons. Sanders reviewed their background at the C. S. M. A. meeting in Washington, showing how they blend with the alkanolamides in particular. A clear shampoo, for example is made from 40 per cent of the polypeptide fatty amide and 7 per cent of a particular alkanolamide, the balance water, color and perfume. A rug shampoo is little different but contained 2 per cent less alkanolamide to which 5 per cent isopropanol is added along with water, color and fragrance. In all these cases 0.1 per cent formaldehyde is suggested as a preservative.

Aluminum Asperin

For those who can't take ordinary aspirin because of stomach upset, aluminum aspirin in tablets is one way around it—easily. The material is now commercially available.

Glycyrrhetinic Acid

It was just a question of time before someone compounded glycyrrhetinic acid into an ulcer and over-all stomach preparation. A German product consists of this material along with colloidal bismuth subnitrate and sodium aluminum silicate. They claim it is good for peptic and stomach ulcers, heartburn and the general run of stomach complaints.

(*continued on page 23*)

HONORARY MEMBERSHIP

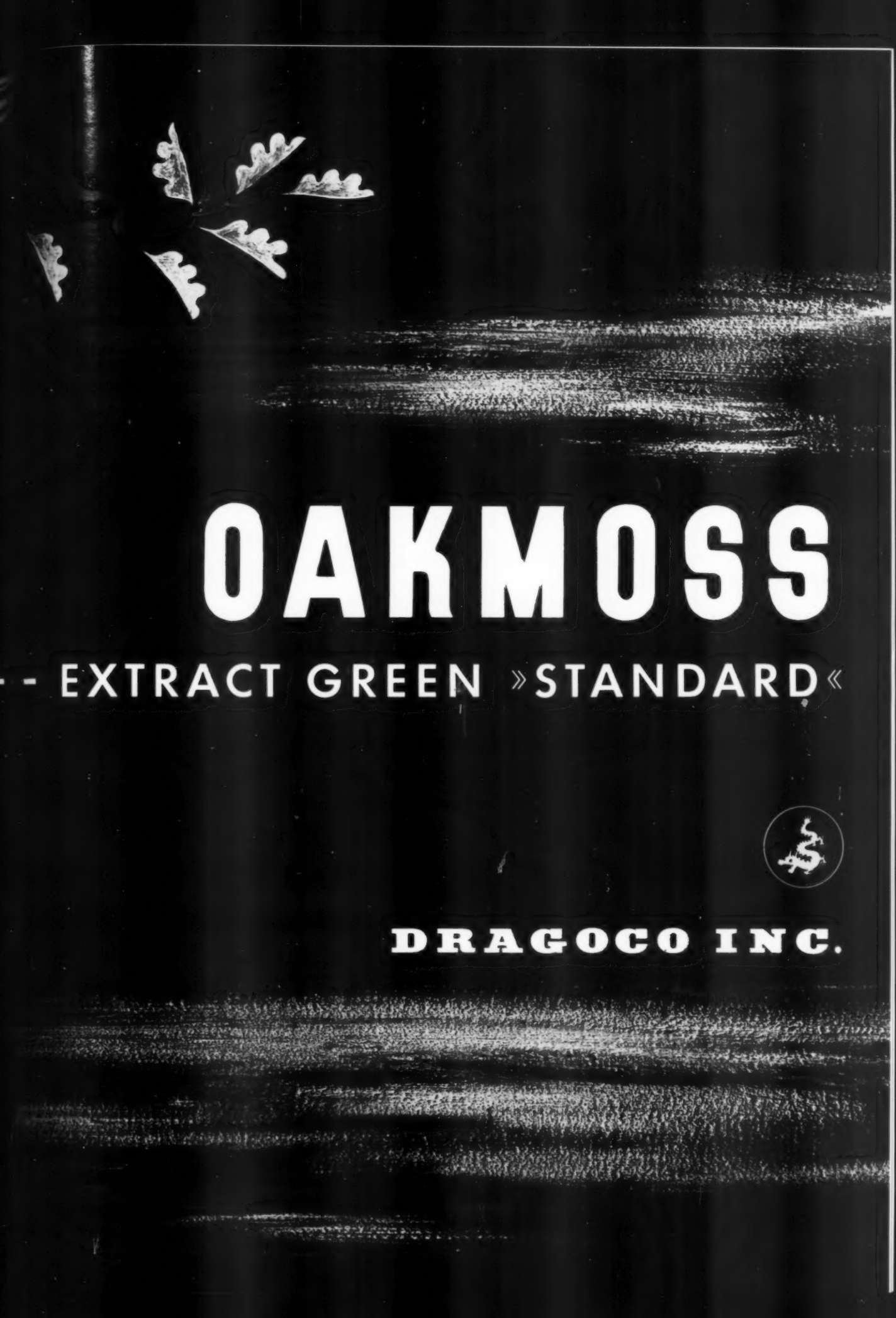
On December 16, 1959, a letter was received from the Asociacion Nacional de Quimicos de Espana, Seccion de Cosmetologia, which reads as follows:

"I have the pleasure to communicate you that you have been named—by absolute majority—Honorary member of our Spanish Society, for which we cordially congratulate you."

(signed) J. Artigas
Chairman

It is very touching to receive this honor from so gracious a group of contemporaries. I shall do my best to acknowledge this distinction before a forthcoming general meeting of the "Seccion" and to live up to the expectations of those who bestowed the honor on me.

RUBBERD
E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Check List of Best Selling Technical Books

☐1. **COSMETICS, SCIENCE AND TECHNOLOGY.** The editorial board of this encyclopedic cosmetic work is made up of H. D. Goulden, E. G. Klarmann, and Edward Sagarin, executive editor. It is in five parts: I, Scope of Cosmetics (80 pages); II, Toilet Preparations (812 pages containing 800 formulas); III, Manufacture and Technology (214 pages); IV, Physiological Considerations (92 pages); plus preface and complete index. The sixty-five experts who contributed, are a "who's who" of cosmetic chemists in the United States and Canada. 1433 pages. Illustrated. Price $27.50.

☐2. **PERFUMES AND THEIR PRODUCTION.** By E. S. Maurer. This is the first text of its kind in the English language to give a complete picture of the perfumer's training, and methods of working. In Part I the reader is offered a complete picture, not only of formulations, but of the entire scope and organization of the perfume industry. Part II is a systematized discussion of all the commonly used perfumery isolates and synthetics. Practical hints on utilization of most of these materials are included, together with notes on their specific applications, blending properties, and other functions. 313 pages. Price $6.50.

☐3. **PRESSURIZED PACKAGING (AEROSOLS).** By Alfred Herzka Jack Pickthall. Although technical problems occur with all types of packages, those which arise with pressurized packages are many and complex. This reference book, by two recognized authorities deals with propellants, containers, valves, filling methods, laboratory procedures, emulsified systems, and perfumes. There is a complete section containing more than 200 formulations, including foods, insecticides, cosmetics, paints, and numerous other products. 400 pages. Illustrated. Price $12.00.

☐4. **PERFUMERY SYNTHETICS AND ISOLATES.** By Paul A. Bedoukian. This carefully compiled volume meets the genuine need for authoritative data on perfumery synthetics. It embraces the history, chemistry, physical and chemical properties, manufacture, uses, and other pertinent data of the principal perfumery compounds; and covers the important perfumery synthetics. A complete index adds to the value of this important work. 488 pages. Price $10.25.

☐5. **HENLEY'S 20TH CENTURY BOOK OF FORMULAS, PROCESSES, TRADE SECRETS—REVISED, ENLARGED EDITION.** Manufacturers, chemists and others call HENLEY'S the most valuable book of its kind. Nearly 10,000 formulas, processes, trade secrets. It contains formulas for nearly everything imaginable; new ways of doing things; technical process; so-called trade secrets. It has helped thousands make more from their present businesses and professions. A single formula may be worth more than 100 times the price of the book. Over 900 pages, completely indexed, cloth binding, $5.25 postpaid.

☐6. **COSMETICS—THEIR PRINCIPLES AND PRACTICES.** By Ralph G. Harry, discusses the skin, its nutrition and scientific care; the hair, its proper grooming, the physio-chemical problems involved in its washing; the teeth and their care, covering the present status of different dentrifices, and the luster-producing properties of ingredients. Much of the information has its source in the research activities of its author, embracing chemistry, dermatology, and microbiology. 786 pages. Illustrated. Price $17.25.

☐7. **INTERNATIONAL ENCYCLOPEDIA OF COSMETIC MATERIAL TRADE NAMES.** By Maison G. deNavarre, brings you reference data you will turn to constantly . . . the most complete listing of all the materials of the world used in cosmetic manufacture . . . including quick concise descriptions of approximately 4,000 materials . . . the names and addresses of the suppliers . . . and a very useful cross-index of the materials and their uses. You will use it when seeking new materials, or substitutes for those you may now be using. 400 pages. Price $7.50.

☐8. **HANDBOOK OF COSMETIC MATERIALS.** (Their Properties, Uses, and Toxic and Dermatologic Actions). By Leon Greenburg and David Lester. Contains alphabetical listing, with frequent cross references, of information on approximately 1,000 substances. For each compound gives: formula (including collateral names), properties, toxic action, dermatological action. Exhaustive bibliography. Essential for manufacturing chemists, cosmetic industry, dermatologists, allergists. 467 pages. Price $13.50.

☐9. **THE ESSENTIAL OILS.** By Ernest Guenther, with the collaboration of leading experts, this monumental six-volume work includes: Vol. I, Origin and Development of Essential Oils. 427 pages. Price $9.50. Vol. II, detailed data on several hundred constituents of essential oils. 852 pages. Price $13.50. Vol. III, discusses the oils of the plant families Rutaceae and Labiate. 777 pages. Price $13.50. Vol. IV, covers the widely used oils: citronella, lemongrass, bois de rose, cassia, and others. 752 pages. Price $13.50. Vol. V, takes up other oils of special interest to flavor, perfume and soap manufacturers: rose, ginger, cardamon, anise. 507 pages. Price $13.50. Vol. VI, completes the monographs on individual oils: wintergreen, sweet birch, juniper berries, and the numerous pine oils. 552 pages. Price $13.50.

☐10. **MANUAL FOR THE ESSENCE INDUSTRY.** By Erich Walter. Comprises modern methods, with formulas for making all kinds of essences for liquors and alcoholic drinks, fruit juices and jams, mineral waters, essences for fruits and other vegetables, essences for confectionery and pastry. Describes raw materials and laboratory practice. Discusses taste and the transfer to foods and beverages. 427 pages. Illustrated. Price $8.25.

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Thioglycerol Permanent Waving

An U. S. Patent #2,889,833 has been granted to E. G. McDonough on the use of glyceryl monomercaptan (thioglycerol) in cold permanent waving to be used at a pH between 7 and 9.5 in a concentration between 1 and 10 percent. The preferred alkali is ammonia although both methyl and ethyl amines are mentioned. A composition of Thioglycerol 5gm, ammonium hydroxide 2.5cc and water to make 100cc is given as an example of the invention.

Better than the alkalis mentioned above is a salt of the base wherein the acid has a dissociation constant less than the base. Such a salt is ammonium carbonate.

Notes

Charlotte Ford having now made her debut, we can all settle back to normal work, Christmas and New Year's allowing . . . Good Luck to Freddy Herzka in his venture into the consulting field. He is the co-author with Jack Pickthall of the aerosol bible known as PRESSURIZED PACKAGING (AEROSOLS). Freddy *is* an aerosol expert . . . A *n*-heptadecanoic acid is reported present in tall oil. It is unusual to find the uneven carbon acids in natural products . . . There will probably be lipstick colors of one kind or another after January 6th. Don't get upset . . . Bob Kramer just got used to his bed at home after a whirlwind round the world tour when he went off again to South America. Safe journey, Bob . . . Sorry to learn that Don Powers starts taking it easy early in 1960 . . . which reminds me Calco's Peacock is now on the retired list. Everybody seems to be getting older . . . Samples of Heyden's N-salicyol-p-aminophenol sunscreen recently patented are available but no plans for production at this time . . . Have you ever thought of a mixture of polypropylene glycols as ingredients of an emulsified hair dressing? . . . Still are some people who don't use deionized water in manufacture. Lots cheaper than ordinary distilled water . . . Pennsylvania Refining Company has just introduced a line of nonionic emulsifiers based on polyethylene glycols and tall oil fatty acids. . . . Contemporary Al Pacini discusses allantoin—methionine complexes as skin remedial agents. It sounds like a good combination. . . . Salzmann and Schiraldi have discovered that from ½ to 10 percent (of the total) of a glyceryl monoester of a higher fatty acid such as from coconut fatty acids, protects a dentrifrice against hardening and getting grainy (U.S. Pat. 2,744,049). . . . This writer pays tribute to Dr. Albert Verley whose passing leaves a void in the ranks of perfumery. Though having known him but slightly during his stay in the United States during World War II, here was a man perennially young, inspiring and kindly. . . . It would be a magnificent gesture (and a Herculean task) if Jack Pickthall would publish more of his data on beeswax-borax emulsions, which would augment and clarify many points in Mannheim's manuscript currently appearing in SOAP PERFUMERY AND COSMETICS (December). But Jack doesn't like to talk about all that work once done. Incidentally, congratulations to him on his appointment to the Vice Presidency of Polak and Schwarz (England) Limited. . . . Lydia Pinkham, Peruna and others take note that under the name of FRAUENGOLD, a special tonic for women has made its appearance on the German scene. Along with a sweet wine base you get aletris, caulophyllum, damiana, lily and valerian (oh yes chlorophyll too) among others to enable a woman to stand up under the daily stress of things. Supposed to be good for neuropsychic functions and neurovegetative organs. . . . Glidden are going to sell their aromatics through Firmenich. . . . Welcome to the United States Dr. T. Bassiri. May good fortune be yours in your new work at Fleuroma. . . . Am acquiring some beautiful first day covers from Dr. A. Zenisek of Czechoslovakia from H. Janowitz in Israel for my stamp collection. . . . Recently Merck and Company have been sending out United States first day covers too. . . . The report of Latty and Clark in NATURE that titanium dioxide occurs in certain aggregate forms as based on electron microscope studies was well demonstrated to this writer by Peacock about ten years ago. The present writer's attributes this to Van der Waals—London forces and not to electrostatic forces however. . . . Congratulations to our British contemporary PERFUMERY AND ESSENTIAL OIL RECORD on this golden anniversary. We all wish them continued success and longevity. . . .

Creative Perfumer

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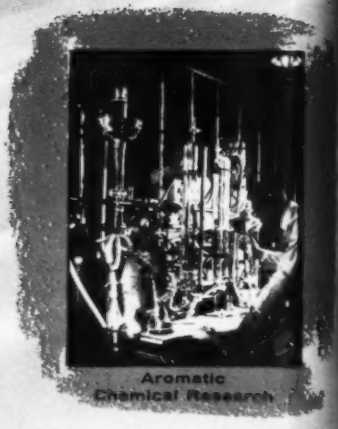
Cosmetic Research

Perfume Evaluation Board



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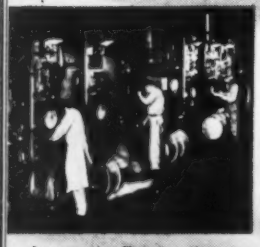

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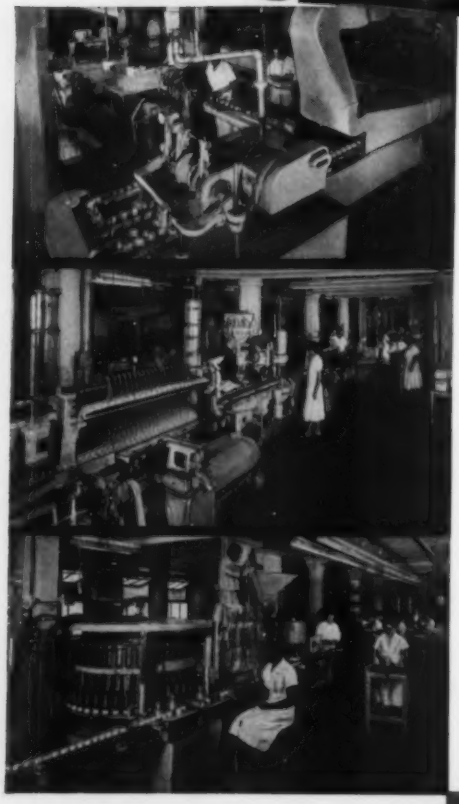

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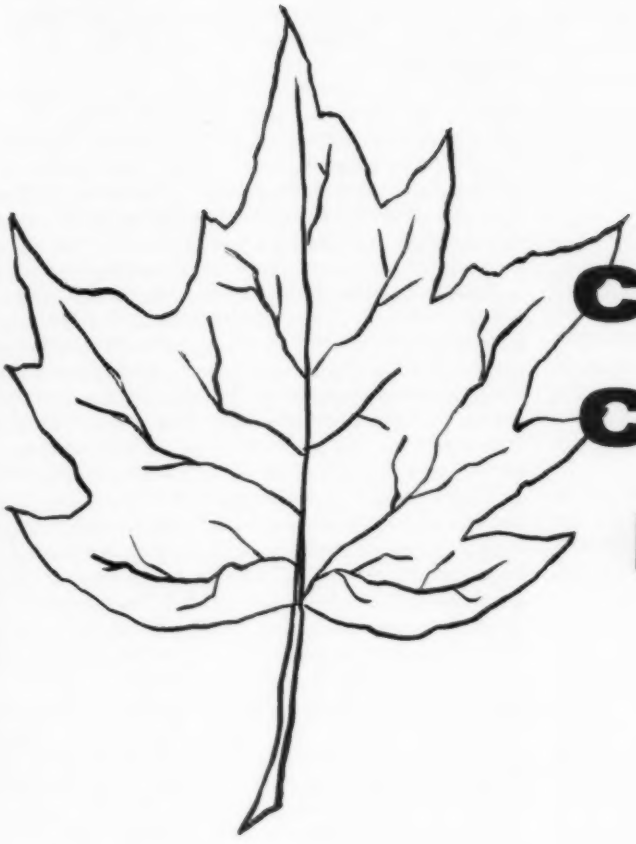

Canadian Cosmetic Patents

M. J. MARCUS*

THE PURPOSE of this paper is to discuss briefly the type of patents which can be obtained for inventions in the cosmetic field in Canada. Since the majority of patents issued in the cosmetic field are of a chemical nature, "cosmetic patents," as patents in the cosmetic field will be called, may be considered to be a particular example of the broader group of chemical patents. The discussion will attempt to show how certain problems in connection with cosmetic patents in Canada are of interest to cosmetic chemists.

What is Patentable

The Canadian Patent Statutes define invention as a new and useful art, process, machine, or manner of manufacture, or any new and useful improvement in any art, process, machine or manner of manufacture.[1] Nevertheless, it is well established in Canada that not all new and useful improvements in the four statutory classes of invention, namely art, process, machine, or manner of manufacture, are patentable.

It is possible that a new and useful development made by a cosmetic chemist might be considered by the Canadian Patent Office to be unpatentable, because it is "obvious." By "obviousness" here is meant that the change made is well within the skill of the person skilled in the art, i.e., the ordinary practitioner in the particular field. Or, as it has been said in the courts, an invention is obvious if it "would have occurred to an ordinary workman to whom these things are familiar."[2]

Other new and useful improvements in the four statutory classes of invention are not patentable in Canada. By statutes, no patent shall issue for an invention that has an illicit object in view, or for any mere scientific principle or abstract theorum.[3]

When these defined classes of what is, and what is not, patentable in Canada are applied to cosmetic patents, there are a number of borderline examples which may be considered.

Natural Products

A natural product may be patented, so long as what the chemist-inventor claims as his invention is new. The anomoly here, of a natural product being new, is not as great as it seems.

For it is possible that the natural product may be in a different physical form than in the way it exists in nature, and this physical difference accounts for its novelty. Thus, the material may be a new form of natural material extracted from a natural product. A patent has, for example, been ob-

* Gowling, MacTavish, Osborne and Henderson, Ottawa 4, Canada

tained for a particular form of senna pod[4] which, while it is not used in cosmetic compositions in their normal meaning, is well known for its laxative properties

Another form of patent could be obtained in connection with natural products. That is, a patent could be obtained for the process of extracting the active ingredient from a mixture of that ingredient and other compounds in the form in which it exists in nature. In Canada,

> "A process implies the application of a method to a material or materials."[5]

So even though the method itself may be old, i.e., the individual steps actually taken in the extraction process might be conventional, the entire process might be patentable. Thus, the process may consist of a novel sequence of conventional steps. If some benefit accrues from the combination of steps, i.e., if the sum of the individual steps results in an improved yield of product, or improved purity, the process might be patentable.

Thus, there is a patent[6] directed to the production of a scent fixative from Myrica Asplenifolia by treating the leafy portion thereof with petroleum ether, and following otherwise conventional steps. This product, of course, has application in perfumes.

There are many cosmetic patents containing natural products. Lanolin appears in a patent directed to a skin cream,[7] and also in patents directed to other skin preparations.[8] The extraction of lanolin is an example of patentable processes embodying old method steps. Thus, one process for the extraction of lanolin involves the separation of lanolin from wool washings by the impact action of air.[9] Another process embodies the formation of a froth in wool washing by passing air through it, so that the froth carries the lanolin to the top of the solution.[10]. Another patented process involves refining crude lanolin by the use of an emulsion with water and soap and a water soluble sulphonated fixed oil.[11]

Enzymes also appear in cosmetic patents. Tyrosinase appears in a hair dyeing preparation,[12] and urease appears in a dentifrice.[13] One patented shaving cream contains a solid mucilaginous water-retaining material extracted from psyllium seed.[14] One patented deodorant contains comminuted, shelled fresh water snails,[15] while another patented deodorant contains a lipid.[16] Many patents contain steroids. One preparation for the treatment of skin contains beta-estradiol,[17] another contains pregnenolone[18] while a third may contain any member of a large listed group of oestrogens.[19]

New Products

New chemical products are easiest to patent, for there is novelty in the product, and also in the process of preparing it, even though the process involves no new chemical reaction. As expressed by the Canadian courts, "When a 'process' consists in the application of a known 'method' to known materials but it has not previously been applied to them and the use of the 'process' results in the production of a new substance, then the 'process' by which it is produced is a new process."[5]

For example, there is a patent directed to a chemically modified lanolin especially suited for cosmetic use.[20] Other patents claiming both chemically modified lanolin and the process of preparing it have been granted.[21]

Other new chemical products, which themselves have been patented either as a new compound or as the process of preparing them occur as ingredients in cosmetic preparations. Thus, one patent is directed to a sun tan lotion containing 2,2′,4-trihydroxy-4′-methoxybenzophenone sulfonic acid sodium salt.[22] Another patent is directed to an antiperspirant containing sodium zirconium lactate.[23]

Another patent is for a hand lotion containing an alkali metal carboxyalkylcellulose.[24] Alkali metal carboxyalkylcellulose, used in cosmetic patents such as this, forms the basis of many Canadian Patents. Thus a particular novel form of water soluble alkali metal carboxyalkylcellulose has been patented.[25] Processes for the production of alkali metal salts of carboxyalkylcellulose have also been patented.[26]

There is also a patent for a body powder containing an organopolysilane.[27] Organopolysiloxanes, used in cosmetic patents such as this, have also been patented in Canada. Thus one particular class of polysiloxane has been patented.[28] Particular methypolysiloxanes have also been patented.[29] A linear siloxane polymer consisting of one ethyl vinyl siloxane unit and two trimethyl siloxane units has been patented.[30] Processes for preparing such organopolysiloxanes have, of course, also been patented.[31]

One patent is for a dentifrice containing a derivative of a benzimidazole.[32] Patents for benzimidazoles used in the preparation of the derivatives of benzimidazoles used in this cosmetic patent have been granted. One such patent is directed to a 5-hydroxy benzimidazole,[33] while another such patent is directed to 5, 6-dimethylbenzimidazole.[34]

Another patent is for a dentifrice containing an alkyl aryl sulfonate.[35] Alkyl sulfonates, used in dentifrice compositions such as in this patent, have been patented in Canada. The patents are directed both to the products and to the process of preparing them. Thus, one patent is directed to dinonylnaphthalene,[36] while another is directed to a particular mixture of alkylbenzene sodium sulfonates.[37]

Finally, there is one patent for a hair dyeing preparation containing an alkali metal borohydride.[25] Patents for the production of alkali metal borohydrides used in cosmetic patents such as this have been granted. One patent involves heating an alkali metal hydride with an alkyl borate.[39] Other patents involve dispersing an alkali metal in a fluid and treating the fluid with hydrogen and a boron-containing reagent.[40] Another patent involves reacting sodium hydride with boric anhydride or alkyl borates or boron fluoride.[41]

Composition of Matter

The majority of cosmetic formulations are of the "composition" type. In other words, they are mixtures of various ingredients. The tendency of the cosmetic chemist is to dismiss improvements in formulations as mere routine changes. While this

may be true in many cases, there are some instances in which improved formulations may be patentable in Canada. One case occurs if by the selection of a particular combination of ingredients a new and unobvious cooperation is evident between the ingredients.

As one example, many lipsticks contain bromofluorescein. However, bromofluorescein has an irritative effect. One patent[42] is directed to the non-obvious combination of an antihistamine, for example, N-p-methoxy-benzyl-N′, N′-dimethyl-N-α-pyradylethylenediamine maleate in order to reduce the irritative effect of the bromofluorescein.

As another example, many brilliantine compositions contain light-sensitive dyes to impart the desired color to the composition. Many of these dyes fade. There is a patent[43] directed to the non-obvious use of benzoyl resorcinol to inhibit the fading of the dye.

Claims

Patent claims in Canada are for the purpose of defining, in distinct and explicit terms, that which the applicant regards as new.[44] For "composition" patents, as discussed above, the claims may read either "A composition comprising . . ." or "A composition consisting essentially of . . ." The former phraseology is preferred in Canada, although the latter is used in United States practice. In the United States, the term "consisting essentially of" is construed to include the presence of additional ingredients which do not materially effect the essential character of the composition. In Canada, however, the courts have construed the phrase "consisting essentially of" to mean that the essential ingredients are those which have been mentioned, in the particular proportion specified.[45] This could presumably mean that inessential ingredients could also be included. The manner adopted in Canada for claiming such compositions is the use of the word "comprising."

The Rohm and Haas Case

There are many examples of combinations patented in Canada in which the word "comprising" appears. Thus, one patent claims "A nail polish comprising . . ."[46]; another patent claims "A dentifrice preparation comprising . . ."[47]; and another patent claims "A toothpaste comprising . . ."[48].

Recently, a ruling of potential practical importance was handed down by the Exchequer Court of Canada. That case is Rohm & Haas v. The Commissioner of Patents.[49] Among the many points decided by that case is that

> "In order to comply with the requirements of Section 36(2), then it is necessary to define all the ingredients of the composition in which an exclusive property or privilege is claimed."

This comment was made against a claim of the type "A composition comprising the active ingredient plus a carrier."

The ruling has very important implications to the cosmetic chemist. If this ruling were to be strictly applied, the cosmetic chemist who invented a new formulation would have to list all the ingredients that could possibly be incorporated into and form part of his invented composition. This would be a formidable task indeed.

How to Get Copies of Canadian Patents

It is possible to obtain printed copies of certain Canadian patents. Only those patents bearing number 445,931 and higher numbers are available in printed form. These may be obtained, at $1.00 per copy, by addressing requests to 'The Commissioner of Patents, Ottawa, Canada.' Copies of all other Canadian patents are available in photostatic form at a cost of 25¢ per page.

Conclusions

Some types of cosmetic patents and the problems involved in obtaining them have been discussed in this paper. It is hoped that this information will be of use to cosmetic chemists. ■

REFERENCES

1. Section 2(d) of R.S.C. 1952, c.203, as amended 1953-54 c.19 and 1953-54 c.40, S.15; " 'Invention' means any new and useful art, process, machine, manufacture, or composition of matter, or any new and useful improvement in any art, process, machine, manufacture, or composition of matter"
2. Dradge v. Parnel 16 Reports of Patent Cases 625 at page 628
3. Section 28(3) of R.S.C. 1952, c.203, as amended 1953-54 c.19 and 1953-54 c.40, S.15.
4. Canadian Patent No. 564,928 issued October 21, 1950 to H.A. Ryan
5. Ciba Ltd. v. The Commissioner of Patents (1957) 27 Canadian Patent Reporter 82 and 30 Canadian Patent Reporter 137
6. Canadian Patent No. 450,388 issued August 10, 1948 to M.Y. Sandox.
7. Canadian Patent No. 547,138 issued October 8, 1957 to W. W. McQueen.
8. Canadian Patent No. 511,260 issued Marhc 22, 1958 to J.R. Verblem.
9. Canadian Patent No. 170,851 issued July 18, 1916 to T.W. Barber.
10. Canadian Patent No. 224,388 issued October 3, 1922 to W. Broadbridge and E. Edser.
11. Canadian Patent No. 492,948 issued May 19, 1953 to E. Snyder.
12. Canadian Patent No. 529,950 issued September 4, 1956 to R.S.M. Frohnsdorff and J. V. Lewin.
13. Canadian Patent No. 503,705 issued June 15, 1954 to J.J. Miller.
14. Canadian Patent No. 502,491 issued May 18, 1954 to C. Dreyfus.
15. Canadian Patent No. 498,961 issued January 5, 1954 to G.S. Yee.
16. Canadian Patent No. 530,426 issued September 18, 1956 to J.J. Scanlan.
17. Canadian Patent No. 538,773 issued March 26, 1957 to K.W. Thompson.
18. Canadian Patent No. 537,456 issued February 26, 1957 to F. Schaaf and F. Gross.
19. Canadian Patent No. 549,384 issued November 26, 1957 to W.J. Tindall.
20. Canadian Patent No. 560,921 issued July 29, 1958 to L.I. Conrad and K. Motiuk.
21. Canadian Patent No. 498,235 issued December 8, 1953 to W.G. Griffin, and Can. Patent No. 502,858 issued May 25, 1954 to W. G. Griffin.
22. Canadian Patent No. 571,216 issued February 24, 1959 to R.W. Wynn and P.E. Hock.
23. Canadian Patent No. 567,322 issued December 9, 1958 to W.K. Teller.
24. Canadian Patent No. 504,791 issued August 3, 1954 to R.J. Mehaffey.
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41. Canadian Patent No. 548,487 issued November 5, 1957 to A.F.S. Bellens.
42. Canadian Patent No. 534,738 issued December 18, 1956 to G.H. Fuller.
43. Canadian Patent No. 516,089 issued August 30, 1955 to A.L. Fox and A.F. Anderson.
44. Section 36(2) of R.S.C. etc.: "The specification shall end with a claim or claims stating distinctly and in explicit terms the things or combinations that the applicant regards as new and in which he claims an exclusive property or privilege."
45. Maxim Nordenfeldt v. Anderson, 15 Reports of Patent Cases 431.
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PLASTICS

For Convenience Packaging

W. B. TIBBETS*

THREE YEARS AGO at the 18th Annual Forum of Packaging Institute I reviewed the history of one of the major packaging materials in wide application in the consumer market—polyethylene—so I shall refrain from any repetitive review of that most interesting product, with one exception, I made a bold statement or estimate that 1960 would be the year when polyethylene production would pass the 1 billion pounds per year mark. Well, I am not disappointed, however, because we have already reached that mark.

Back in 1869, John Wesley Hyatt procured a patent on a material which brought to a commercial status an enterprise which has grown to be the great plastics industry. This material was a nitrated cellulose plasticized with camphor, which was trademarked "Celluloid."

About 40 years later, in 1908 in fact, Dr. J. E. Brandenberger of Neuilly sur Seine, France, laid the basic groundwork for the future development of the great transparent packaging industry. He refused to be disheartened by the lack of success with his viscose treatment of cloth. He was searching for a silken luster to enhance the appearance of cotton but his labors were rewarded by establishing a relatively tough thin film that was made supple by further processing and finally became "Cellophane."

Late in the teens or early twenties the cellophane industry was initiated in the United States by DuPont and in 1927 the basic patents for moisture-proof cellophane were issued to Dr. W. Hale Charch and Mr. Karl E. Prindle. Thus, cellophane was transformed from a luxury overwrap and decorative material to a functional packaging product with a tremendous potential market. Parenthetically, I would like to remind you that Mr. Prindle was the recipient of the Professional Award of the Packaging Institute when this honor was instituted in 1957.

About 1905 Dr. Leo Hendrick Baekeland was

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Presented before the 21st Annual Packaging Institute Forum, November 17, 1959

looking for a substitute for shellac. Following four years of endless searching Dr. Baekeland succeeded in having patent coverage for phenolic established. By mid 1910 it was demonstrated that this new product, sold under the trademark BAKELITE, had broad market potential.

From that starting point others have "carried the ball" most efficiently and a few of these dedicated people have demonstrated true strokes of genius in directing effort into profitable paths. One of my colleagues once said "Any damned fool can invent a new resin, but it takes a genius to know what to do with it." Thus, from a fond dream of a most earnest and dedicated man of extremely well founded chemical knowledge has developed the broad spectrum of "BAKELITE" Brand Resin plastics manufactured and sold by the more than 8 thousand Union Carbide Plastics Company employees.

So it is with the rest of the successful chemical companies whose beginnings were relatively simple but whose growth has been equally spectacular: Avisco, Celanese, Dow, Koppers, Monsanto, Olin, Spencer, U.S.I. to name a few, in addition to Celanese, DuPont and Union Carbide, are responsible for manufacturing the plastics materials which provide today's packaging.

Ten years ago this month the Business Information Service of the U. S. Department of Commerce issued a bulletin entitled "Trends in Plastics and Transparent Flexible Packages." I would like to quote a few sentences from that bulletin to demonstrate the timeliness and almost clairvoyant statements of those who prepared this bulletin.

> "Transparent packaging, including rigid plastics, flexible bags, wraps, foils and window-type containers has attracted, in this post-war period, greater interest than any type of packaging. The tremendous power of visibility in presenting consumer products in such a manner as to stimulate desire and increase the volume of impulse buying makes this interest a natural development of the trend toward prepackaged merchandise. Prepackaged meats, vegetables and fruits have been the leaders in this trend, and expanded use by self service stores seem assured. This type of store is placing more and more emphasis on effective packaging. Furthermore its number are rapidly increasing. The number of supermarkets in this country according to trade estimates, has grown from 6 thousand stores in 1939 to nearly 12 thousand in 1948 (and I should add parenthetically to over 20 thousand in 1958).
>
> As self service grows so will the demand for transparent packages increase. The food proportion of self service business is believed to be close to 80% and is chiefly represented in such uses as baked goods, crackers and biscuits, candy, meats and produce.
>
> "Transparent bags, wraps and foils are being supplemented by the increased use of thermoplastic and thermosetting molding materials such as phenolics and ureas, all of which are in increasing demand for new rigid luxury type containers and for molded caps and closures."

A few other items from that same bulletin are noteworthy—

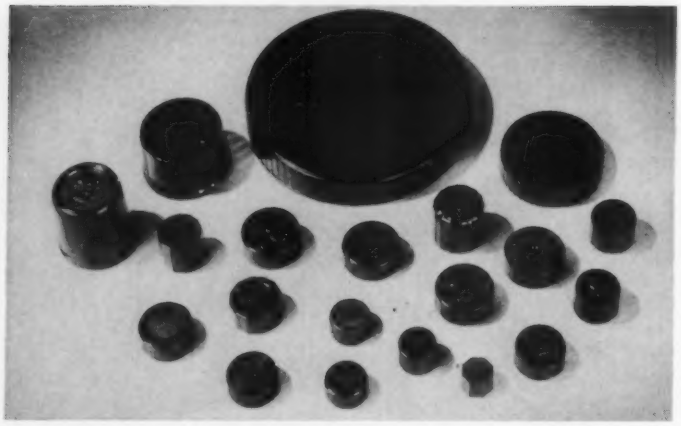
> "One large self service retailer volunteered the statement that by 1952 the sale of fresh meat over the counter by butchers will be a thing of the past provided the customers can be assured of high quality prepackaged meat."

That statement has certainly been verified by the present day status of our current supermarket business.

This bulletin goes on at length to describe the behavior of plastics in packaging uses all over the country and then states "Behind these new developments is a constant and expanding research not only in technique but also in application and use."

One large retail grocery chain in Chicago attributed 200 to 300% sales increase in such common place items as dry beans and peas entirely to the convenience and customer appeal of transparent packaging.

Others have attributed the reason for phenomenal increases in sales volume of prepackaged items to (1) The elimination of the need for the customer to deal with a butcher or other sales people, (2) The ability to make selections at leisure, and (3) The



printed legends on the well designed packages give complete description and instructions for use, as well as price, which allows easy selection of articles by the most frugal housewife.

So, you see, *Convenience Packaging* has been a "buy" word for at least a decade. We are just now becoming well enough educated in ways to meet consumer demand that a concentrated effort is being expended to introduce these conveniences into our package design and engineered packaging.

At one time, and not so very long ago at that, plastics were indeed considered "luxury" packaging items. This is no longer the case because they are being used either alone or in combination with a multitude of other commonly used materials to produce literally billions of packages for daily use by domestic and industrial consumers.

This transition has been characterized by an orderly and determined progress. Many uses are now taken as a matter of course. The material formerly employed has faded from our immediate recollection.

Are you aware that most beer cans produced today are lined with plastic? That advantage is taken of the tasteless characteristic of certain types of vinyl resins?

Do you know that hundreds of millions of paper board milk cartons in daily use are coated with a protective and very functional plastic?

Would it challenge your comprehension to hear that more than 250 million pounds of polyethylene was used in packaging applications in 1958?

Why is it that the use of plastics has grown so rapidly in the field of packaging? I firmly believe that the answer lies in two basic reasons.

First—plastics, as a class of materials, provide a broad range of physical and chemical properties. I must call your attention to the fact that plastics comprise a whole family of basic products just as the classification of metals. Each component has specific differences but as a group they offer a broad range of physical and chemical properties.

Second—plastics lend themselves to a variety of fabrication methods and this unique versatility stimulates the imagination of packaging engineers who turn an ingenious design into a practical reality. The particular property of thermoplasticity, the capability of being formed or shaped by heat and subsequent fixation of the new form by cooling, is a highly important factor. Then, too, plastics may be sealed by means of heat alone of by solvents or glues and can be decorated or printed by any of the known methods—flexography, lithography, rotogravure, silk screening, hot stamping and any other.

Thus, the chief reason for the almost universal acceptance of plastics for convenience packaging is a combination of these two performance features. Out of the large family of plastics, four have played a major part in bringing about this new emphasis on packaging: Polyethylene, Styrene, Vinyl and Phenolic. Let's see if I can identify these names more clearly and impress upon you the versatility of plastics in the multitude of packaging uses.

Polyethylene, as we all know, is an inherently flexible, somewhat waxy solid which lends itself readily to thermoforming by any of the many methods. It can be injection molded to form a usable shape. It can be blow-molded to make bottles. It can be vacuum formed to make containers. It can also be extruded into very thin film which can be directly fabricated into bags or machine-wrapped around a product to make a highly efficient and protective consumer-item package. It can be extrusion coated onto paper, and in such form becomes a tough component of multiwall shipping bags or a highly functional single use container for sugar for your beverage coffee or concentrated bleach for the domestic washer.

As another concept of use of polyethylene coated paper products—it may be said that a great advantage results from the marriage of these two relatively low cost materials. This is especially true when high density polyethylene is used as the coating. Such a combination greatly improves the grease and odor transmission properties and makes possible a whole new range of design ideas. Thus, convenience packaging can result from any of these methods of transforming this versatile plastic.

As another evidence of the use of plastics for convenience packaging let's look at the collapsible tube market. The metal tube which was introduced about a hundred years ago was designed to hold artists' colors and to keep them in usable condition. Many years and many materials later we now find plastics in daily use for all sorts of semi-fluid prod-

ucts. Just to give you an idea of the magnitude of this market—over one billion units per year represent about $40 million worth of business—and much of this is going more and more to plastics, especially polyethylene.

I mentioned styrene as another member of the four which have been responsible for the growth of the plastics packaging market.

This is the lowest cost member of the group and has been seen in a multitude of forms as injection molded rigid containers which provide strength and appealing appearance to the ultimate package. In addition to the simple container, this versatile thermoplastic can be molded to satisfy the most intricate demands of the packaging engineer. Brightly colored boxes, covers and many other molded shapes provide packages with outstanding sales appeal—yet are durable enough to withstand shipping and consumer handling and versatile enough to provide reuse features. Besides molding, styrene sheeting lends itself readily to thermoforming. We are probably all familiar with the many colorful vacuum-formed trays which have been successfully incorporated into many of today's packages.

Recently, styrene has begun to show up in the market-place as a highly transparent, extremely glossy thin film used for overwrapping of certain soft goods items or as overwraps on highly decorated cartons. The uses of styrene in this form are just being explored but you may rest assured that it will find its place as another convenient consumer package.

Packaging uses of vinyl sheet are not so numerous, but, nevertheless, just as spectacular as some of those just described. One such use takes advantage of its excellent ability to be vacuum formed around such items as hardware and toys resulting in a thin but tough skin which conveniently enhances the item's display and discourages pilfering. Truly this is referred to as skin-packaging.

The wide range of physical properties that vinyl resins possess also makes them suitable for a variety of coating applications, as can be evidenced by the yearly consumption of 30 million pounds for coatings alone. We have already mentioned the impact that vinyls have made on the beer bottle. Slightly under 10 billion cans a year receive a protective vinyl lining. With the current trend towards the increased use of cans, industry estimates put yearly consumption at around 25 billion cans a year by 1975. Coatings could also move forward in other important can markets—fruits and vegetables, evaporated and condensed milk and soft drinks to mention only a few.

Let us look now at another important coating application—the coating of vinyls on paper, foil and cloth as well as other important substrates. Vinyl resins, with their unique combination of properties, make possible an extremely low-cost package which combines the best features of both the substrate and the coating. According to forecasts, the number of coating applications will continue to expand, now that coated substrates have opened up this whole new area of design ideas for the packaging industry.

Probably the most familiar use of phenolic resin is in that instrument that most of us use daily but frequently wish had never been invented—the telephone. Then, too, the handles on our cooking utensils and on electric irons are generally made from phenolic resins. And in the field of packaging we find the patriarch of plastic closures—the phenolic screw-type cap for bottles, jars and vials. This plastic is light in weight, usually corrosion resistant, is capable of being produced in huge volumes by mass molding techniques and, in this latter use alone, nearly twelve million pounds of resin were sold in 1958.

I have mentioned several times the coatings uses of some of these plastics. Well, the excellent protective qualities of aluminum foil would frequently be made ineffective if it were not for polyethylene or vinyl resin coatings. By means of these plastics highly functional packages can be fabricated by heat sealing techniques. Then, too, the resistance to damage by creasing or abrasion as well as the resistance to corrosion are tremendously increased.

Some folks may challenge the emphasis which I have repeatedly placed on convenience packaging with plastics but the facts are there and the feelings of others have been expressed rather strongly.

In the July 1959 issue of "Consumer Packaging" there appeared a pair of statements under the title of "Will the Consumer Pay More For Convenience Packaging?"

Mr. Donald B. Lourie, President of the Quaker Oats Company answered:—

> "Our customers seem to agree that improved packaging of grocery products is worth the cost, provided the packages make the products significantly more convenient to use. By their purchases, customers are testifying that they want products in easy-to-prepare form, and are willing to pay for time savers. It appears that improvements in package design are closely related to better sales. Consumers are quick to spot changes in a package, especially if it gives evidence that the product inside has been improved."

Mr. Donald Parsons, Executive Director of the Supermarket Institute responded:

> "Yes, examples are everywhere at hand. When the shopper buys popcorn in an aluminum foil skillet with vegetable oil packed in so the popcorn is ready for the flame, she gets a lot of built-in maid service, even though she gets only a small amount of popcorn. There are hundreds of other examples of convenient packages, which, while the consumer never demanded them, found a receptive market. Because packaging costs money, these foods cost more when considered pound for pound against bulk or simpler packages. The food industry, however, must constantly educate the consumer to the amount of convenience and built-in maid service she is buying. Otherwise the industry gets blamed for the cost comparison she makes."

There are most encouraging views and point the way toward more exciting applications for the ever increasing family of plastics. ■

"Donomen" — A New Nomenclature System for Chemicals and Pharmaceuticals*

The problem of naming the stream of new chemicals that pours from the laboratories is one that needs no emphasising. The author here outlines a method whereby ten million new names could be easily coined to cope with the output of new chemicals virtually for ever

E. C. S. LITTLE, M. SC.

MOST PEOPLE connected with the making, marketing and use of pesticides and pharmaceuticals—members of a large and rapidly expanding population—agree that the naming for common use of the stream of new chemicals could be better organised—especially on an international basis. The chemical names of the new substances, nearly all organic and usually complex, are usually so cumbersome and incomprehensible to the uninitiated that they are quite useless for everyday speech and are even a serious hindrance to technicians familiar with them. The usual alternatives of code numbers or alphabetical abbreviations are not much better.

It needs a scientific approach to solve this international problem, but as yet there is no obvious sign of much energy being directed towards this highly important end. This needs emphasising because it may be overlooked even by those who know that the progress of biological sciences would long ago have been halted if a naming system had not been developed for the vast numbers of different organisms under study. The total number of pesticides being developed to deal with organisms of agricultural, industrial or medical importance has not yet become very large but the stage has already been reached where confusion is impeding progress. The naming of pesticides differs from the naming of organisms, for although many chemicals can be grouped into families and could perhaps be subdivided into "genera" and "species" yet a binomial system would be far too awkward especially for farmers, growers, salesmen and others who have to use the names frequently. What therefore, is wanted? The following are essential requirements:

(*a*) Names for common use, issued as labels for all new chemicals before they are announced to the public.
(*b*) Names which are easy to say without ambiguous alternative pronunciations.
(*c*) Names which are easy to spell and are phonetic.
(*d*) Names which are internationally acceptable to all countries using, or familiar with, the Roman alphabet.
(*e*) Names which are of a class unlike other common words and thus are not likely to be confused with everyday language.
(*f*) Names which are easily coined by simple systematic rules.

It is not necessary to strive for similarity between the common name and the full chemical one because this is difficult, complicates the issue, and seldom is effective. With usage, the name, whatever it is, becomes identified with the chemical. People other than technicians are not interested in chemical structure. They only want a handle by which the substance can be linked to its properties and by which proprietary products can be judged.

The method which is now described is an attempt to meet these requirements. It is called Donomen. It is based on the principle that all pesticide common names should be tri-syllabic words. Such words when simple, come easily to the tongue, are long enough for clarity and short enough for simplicity. They are coined by the following system:

1. The words will all consist of four consonants and three vowels and thus be seven letters long.
2. The words will begin with a consonant and have vowels and consonants alternating until the last consonant which finishes the word, e.g., "tenibol." The words would be pronounced with all vowels short and the emphasis on the first three letters and the next two pairs equally, i.e., ten-ib-ol.
3. Any consonants which are likely to cause spelling errors are excluded. Such consonants are:

Q	confusable	with	K
C	"	"	K or S
Y	"	"	I
X	"	"	KS

4. By these rules consonant conjunctions such as TR or ST or BL and double vowels are also excluded.

(*Continued on page 39*)

* Reprinted from The Pharmaceutical Journal, Sept. 1959

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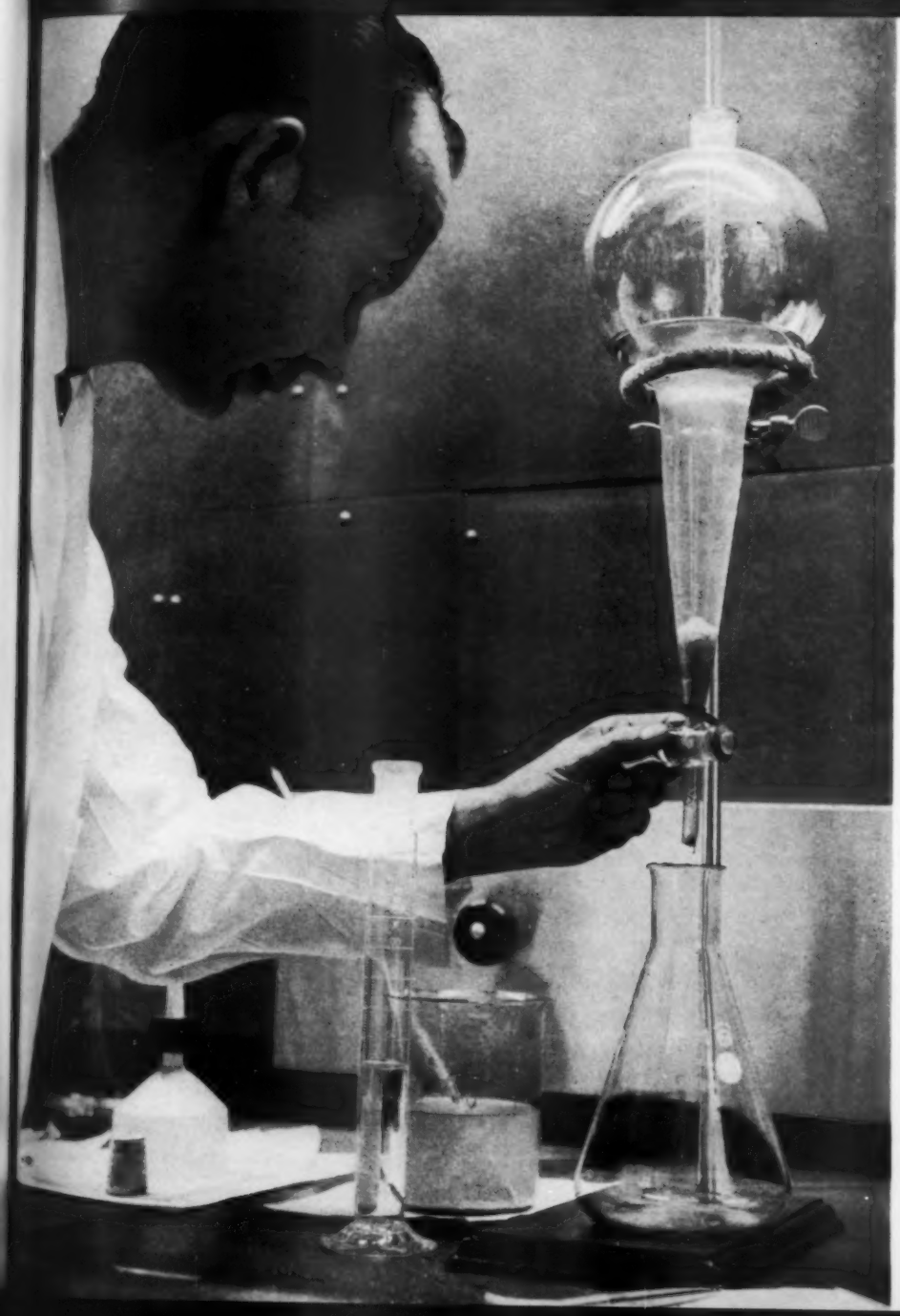

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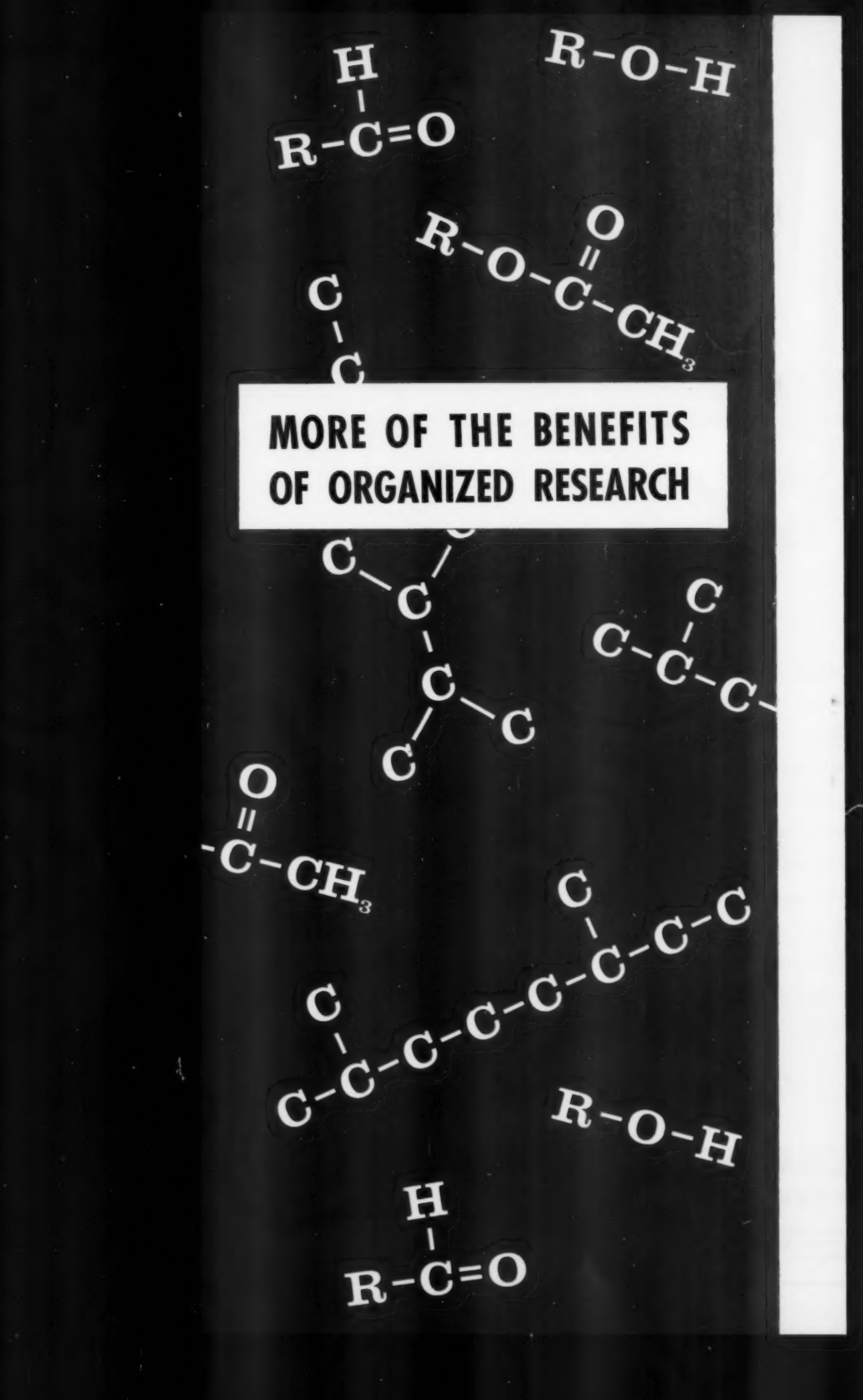
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There are thus 17 consonants and 5 vowels available which would give 17 x 17 x 17 x 17 x 5 x 5 x 5 combinations = 10½ million. There are thus enough names available between "Bababab" and "Zuzuzuz" to cope with the output of chemists virtually for ever. Critics of such a scheme might use these words as examples of ridiculous names which can be coined. This is true if by ridiculous is meant out of the ordinary. But the point of this system is that the coined names will be different from ordinary speech. They will be a new language—the language of pesticide nomenclature. With 10 million to choose from the more extravagantly peculiar words need not be chosen and there are ways by which this selection can be assisted by additional rules. However, it is interesting if, as an experiment, an attempt is made to imagine that an exceptionally peculiar word is already established. Suppose "bababab" to be the name of a well known insecticide. After a number of repetitions of the word as part, say, of imaginary recommendations it soon begins to lose its strangeness and becomes just another name—in style not so very different from DDT.

Donomen words are already among the most successful in pesticide nomenclature. They come easily to the tongue, they are seldom spelt incorrectly and do not promote much argument about pronunciation. Examples are simazin, dinoseb, dalapon (weed killers), demiton (insecticide), and fumarin (rodenticide). For coining Donomen words a machine would be set up to type them out mechanically. A number of rules could be fed into the machine to exclude words which are particularly grotesque or which present any difficulties in pronunciation. Such rules could include:

(*a*) The vowel U should not precede H, R or W (when it tends to be pronounced long as in monuron).

(*b*) The consonants H and W present difficulties and should only be used in the first letter position.

(*c*) Any one consonant should not appear more than three times in one word and then not consecutively.

(*d*) Any one vowel should not appear more than twice in any one word. These modifications bring the words available down to about eight million.

(*e*) Words should be printed at random but a memory store kept so that they are not repeated and none left out.

By this method there would be no longer any grounds for saying, as did the Terminology Committee of the Weeds Society of America (*Weeds*, 1958, 6, 71), that "it is difficult if not impossible to coin common names for herbicidal chemicals until they have reached the commercial development stage." A similar statement has been made by the British Standards Institution (Recommended Common Names for Pesticides, 1957).

To get pesticide nomenclature efficiently established international agreement is needed on the following lines:

1. That a standing committee of the United Nations (arranged, say, by F.A.O.) be appointed for nomenclature.
2. That a system of coining names based on the principle suggested here (or a better one) be adopted, mechanical aids to production of the names being used.
3. That before any new chemical is announced in any way by public lecture or article a common name has to be applied for; this name to be used in conjunction with the chemical name until the common name becomes established.
4. If the chemical fails to become commercially important it does not affect its common name which remains on the records in case the chemical should ever be revived.
5. If secrecy is necessary for those who wish to obtain patents, then, by permission, the common name, unconnected with its chemical description, could be used until such time as protection has been obtained. This will avoid the confusing coding systems often submitted by commercial firms who announce new chemicals.
6. It would be necessary for commercial firms by general agreement to avoid Donomen words for trade names (there are only a few in use as yet). It would be desirable if firms, after using whatever trade name they considered appropriate, would then, as a general rule, insert in the label, "Contains . . ." giving the Donomen common name.
7. Agreement is needed as to the degree of complexity a chemical has to have before a coined name is required. It is suggested that any chemical already adequately described by two short words does not need a coined name, e.g., substances such as sodium chlorate and methyl bromide. Copper oxychloride and maleic hydrazide are border line cases, while trichloracetic acid is becoming too difficult for ordinary use.
8. Common names like lindane, thiram and 2,4-D are so well established that there seems little point in altering them. But there are others, e.g., propham, dichlone, chlorfenson, coumachlor and tecnazene which are not so well known and which have obvious blemishes as regards spelling or pronunciation or both in spite of their careful selection and publication as a British Standard. These should be altered as soon as possible, e.g., to ponopam, dikolon, koreson, kumakor, tekazin. It could be argued as to which set is the more euphonious but there is little doubt as to which would be easier to pronounce, spell, and remember by people of different nationalities. This is the test of efficiency. Some names, already close to the Donomen system, could be improved by minor modifications, e.g., parathion to paraton, monuron to moneron, diazinon to dazinon, etc.
9. Chemists choosing common chemical names (as distinct from conventional nomenclature) should also use the system. Why should not penicillin be called penilin, or gibberellic acid giberik (or jiberik) acid? There are not many people, educated or otherwise, who could spell the present names without hesitation or error.

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10. Perhaps it is asking too much, but if a system such as Donomen were internationally accepted, would there be a chance of biologists being persuaded gradually to revert to simplified nomenclature for organisms? In a busy biological world conversion of, say, *Leptinotarsa decemlineata* to *Lepotar dekemat* would, over the years, save a massive amount of time, paper and energy. A change from (say) Rhododendron to Rodenon would upset conservative opinion but future generations would benefit and be thankful for the change. There are enough Donomen words to meet all biologists', as well as chemists' requirements in the future.

There are probably only a few dozen Donomen type words in English. Some examples are, general, develop, janitor, monitor, regular, seminar, benison, tabular, popular and venison: and a number ending in -ed, such as defined, damaged, desired, related, which are not pronounced according to Donomen rules. The only words that spring to mind from foreign languages are kamerad and matelot. It would be interesting to list how often this word form is used in different languages—it would make a good competition.

Here are a few Donomen words, coined at random to illustrate the style they take: putalet, rodinef, duborit, miperos, positon, vedikor, mitinad, burijak, gatelas, benidin. Few Donomen words mean anything and it would be rare for any commercial firm to have to complain because they had been issued with a word like "mukinit" or worse still "tisadud"! Play on Donomen words, in spite of their simplicity, is difficult, especially if they are pronounced according to rule and therefore they should come to mean, as they are selected, one thing only—an easy name to describe a complex chemical. There are ample words available so that any combinations which had any significance in any language could be rejected. The suggestion made for the Donomen system may have some features which are not acceptable to everyone. Ideas as to how the system could be improved would be welcomed. If from discussion and suggestion a fully workable nomenclature system were to be created and implemented then the purpose of this article will have been achieved.

NOTE: When this system was presented to the British Standards Institution, Pesticides Nomenclature Committee, for their consideration the author also submitted an experiment on the system in support of his arguments. This consisted of an analysis of 500 Donomen words coined at random. These words had been studied by people familiar with seven European languages. They found that eight words out of the 500 had a strong similarity to words in one or other of the languages under test, and about 30 had a slight similarity. In addition there were about seven words with some similarity to known trade names in these languages. From this test it can thus be estimated that about 10 per cent. of Donomen words might have to be rejected on grounds of similarity with other words leaving the other 90 per cent. available for use because, at present, they are meaningless. ■

MEAT TENDERIZERS

OTMAR SILBERSTEIN*

THE ART OF TENDERIZING meat with plant enzymes goes back to the reports of Spanish conquerors who observed that natives of Central America cooked meat either together with unripe papaya fruits or wrapped in papaya leaves.

Though the proteolytic activity of the juice of papaya was confirmed experimentally late in the 19th century, (1) enzymatic meat tenderization was not widely used until the last decade. The practice has gained in favor during the past five years, especially after the Meat Inspection Bureau approved it in federally inspected plants for meats to be frozen after tenderizer treatment. (2) Various aspects of enzymatic tenderization of animal tissues have been covered by a number of patents, (3) and the number of commercially available meat tenderizers has literally mushroomed.

Enzymes

The following is a list of proteolytic enzymes which could be used for meat tenderization.

Plant	*Scientific Name*	*Proteolytic Preparation*
Osage Orange	Maclura pomifera	Macin
Milkweed	Asclepias syriaca	Asclepain
Fig	Ficus carica	Ficin
Pineapple	Ananas comosus	Bromelin
Papaya	Carica papaya	Papain

Other proteases are derived from animal origin, the edible mushrooms, as well as other fungi and bacteria Papain is by far the most widely used.

The enzymes differ in their action on the types of fibers found in meat which are responsible for toughness. Generally speaking, the plant proteases show greater activity on the tough connective tissue fiber proteins collagen and elastin, while the microbial proteases show little or no activity on connective tissue but have greater activity on muscle fiber proteins. (4) The performance of the enzyme preparations is also influenced by their purity and their pH and temperature optima.

* Wallerstein Company
Division of Baxter Laboratories, Inc.
Wallerstein Square, Mariners Harbor
Staten Island 3, New York

The most serious problem inherent in the use of tenderizers is that of uniform distribution and penetration. Manufacturers of meat tenderizers try to solve this by various formulations.

Formulations

Meat tenderizers are presently available in powder form to be used as such or to be dissolved prior to use. Liquid tenderizers are available in single strength for direct use or as concentrates to be further diluted. There are specific formulations for domestic, restaurants, and packing house use. For the housewife, various types of packages are available such as powders to be dissolved or dispensed from shakers or liquids to be sprayed from pressurized containers.

Although tenderizer formulations may vary a great deal (see below) they conform in some respects:

(h) The active enzyme ingredient because of its high efficiency is present in small amounts usually less than one percent. The exact amount used will depend on the specific activity of the enzyme preparation.

(b) The major portion will consist of inert ingredients which make convenient handling of the enzyme possible. Another function of the inert ingredients is to impart some anti-microbial properties to the tenderizer solution to prevent buildups of microbial populations.

The following are examples of the type of meat tenderizer formulations frequently encountered in commerce.

	Powder	*Liquid*
Salt	40-80%	10-20%
Sugar	10-30%	4-8 %
Propylene Glycol		10-20%
Water		60-70%
Mono Sodium Glutamate	10-20%	5-10%
Hydrolyzed Vegetable Protein		5-10%
Enzyme (s)	as desired	as desired
Spices	as desired	as desired

The amount of enzyme (s) involved will vary with the strength of the preparation and the strength

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AMERCHOL PARK . . . EDISON, N. J.

to which the tenderizing formulation is designed.

Effect of Tenderizers

Tenderization is a natural process which is normally accomplished by aging. During this process the enzymes present in the meat and those contributed by microorganisms which normally grow on the meat surface bring about a gradual protein breakdown. The breakdown products, and to some extent products of microbial metabolism, contribute to an eventual flavor improvement.

Enzymatic meat tenderization accomplishes the same results and, in addition to providing the consumer with more tender cuts of meat, has many advantages.

1. It reduces the required holding time for meats, thus reducing cost of storage, handling, and refrigeration.
2. It upgrades various cuts of meat thus increasing the supply and variety of meat which can be offered to the consumer. With the rapid population increase, such an application will have growing economic significance. Even now, as a recent newspaper report indicated, (5) the use of a meat tenderizer permits some restaurants to offer a steak dinner at a popular price.
3. Tenderizers reduce the required cooking time thus reducing shrinkage and flavor loss.

Future Developments

The surface treatment of meats as practiced most widely now is beset by several problems. With large pieces of meat, such as roasts, penetration is poor. Also, the treatments require additional labor and for the meat packers, additional equipment. For this reason, packers have been experimenting with injection of tenderizing enzymes into live cattle. However, there are problems inherent in this method. The labor cost involved, the considerable exciting of animals during injection, and the fact that enzyme may not be distributed as desired are only a few of these. In this respect, the possibility of injecting or pumping carcasses immediately after killing seems to hold more promise.

In addition to the development of new treatment methods, tenderizer formulations will be designed to perform more specific tasks by providing blends of enzymes and by the incorporation of additives which would improve penetration and performance. ■

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Edwin Canham
President, U. S. Chamber of Commerce

Steve Mayham
Executive Vice President, Toilet Goods Assn.

Soap and Glycerine Producers Meet Discuss Cosmetics-Toiletries Field

"The Challenges of the Sixties" was the theme of the 33rd annual convention of the Association of American Soap & Glycerine Producers, Inc., at the Waldorf-Astoria Hotel, New York City, January 20 through 22. Industry and allied industry executives from all parts of the country attended the three days of business sessions, round table discussions, and symposia touching on all aspects of soaps, detergents, fatty acids, and glycerine.

Among the principal speakers at luncheons and general sessions were Edwin Canham, editor of the Christian Science Monitor and president of the U. S. Chamber of Commerce, whose subject was "The Challenges of the Sixties"; White House Correspondent Ray Scherer of NBC; Duncan Ridler of the Food and Agriculture Organization of the United Nations, Rome, Italy, who spoke about the world coconut oil situation; Dr. Marcus Nadler, professor of finance, NYU School of Business Administration; and Arch Patton, director of McKinsey & Company, Inc.

Representatives of the toilet goods industry met to hear reports on recent advances in the use of glycerine and glycerine derivatives for cosmetic formulations delivered by research scientists in the field of cosmetic research. Panel moderator was W. W. Bray, Chairman of the Glycerine Steering Committee; keynote speaker was Steve L. Mayham, Executive Vice President of the Toilet Goods Association. Symposium members who reported on latest developments in toilet goods chemistry included Dr. Paul Lauffer, Director of Research, Northam-

Andrew K. Forthmann
President
Association of American Soap & Glycerine Producers

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S. J. Strianse

Dr. Fred H. Snyder

Dr. Paul G. I. Lauffer

Warren Co.; S. J. Strianse, Director of Research, Yardley International Laboratories; Dr. Fred H. Snyder, M. D. Research Division, Procter & Gamble Company.

Steady Growth Seen for Toilet Goods

Steve L. Mayham, discussing "The Toilet Goods Industry in the 60's" saw no reason why the recent rate of growth established by the industry during the 50's would not be maintained in the decade just begun. Total industry sales increased from some $840 million to over $1.5 billion between 1950 and 1959—a startling 80% increase, he declared.

Dr. Paul Lauffer reporting on the "Functions and Performances of Humectants Such as Glycerine in Lotions, Creams, Hair Dressings, etc," stated that "Glycerine has established itself as a highly versatile ingredient in cosmetic preparations. Although generally viewed within the narrow focus of its function as a humectant, its use should not be limited in terms of this one important property. In many formulations the solvent, plasticizing lubricating, or binding properties of glycerine recommended its inclusion, and this list by no means exhausts its desirable qualities."

Two major avenues of research dominate current investigations in cosmetic chemistry, observed S. J. Strianse. He said that researchers were working toward a better understanding of the basic chemistry and physiology of the skin, and an expanded knowledge of all aspects of cosmetic technology as they relate to essential cosmetic systems. "Glycerine and glycerine derivatives have been, are, and will continue to be among the building blocks of better cosmetics," he concluded.

In his discussion of current research at Procter & Gamble, Dr. Fred H. Snyder reported that results of investigations into cosmetic and skin chemistry over the last few years have made it increasingly clear that retention of water by the outer layers of the skin and prevention of excessive loss of moisture are of major importance in maintaining the skin in a soft, smooth and supple condition. "Methods have been developed which permit careful study of these properties and of the factors which influence them," he noted, adding that observations on the role of glycerine in these phenomena point to additional fruitful investigations.

Andrew K. Forthmann Re-elected President

Andrew K. Forthmann, President of the Los Angeles Soap Company, today was re-elected to his third term as president of the Association.

New members of the fifteen-member board of directors are E. H. Farnham, Manager of Organic Chemical Intermediates, Dow Chemical Company, Midland, Mich.; Kenneth Fulton, President, Beach Soap Company, Lawrence, Mass.; A. B. Hersberger, General Manager of the Foreign Marketing Department and Manager of the Special Sales Department, Atlantic Refining Company, Philadelphia, Pa.; F. G. Meeker, Executive Vice President, Andrew Jergens Company, Cincinnati, Ohio; and Howard Young, President, The Davies-Young Soap Company, Dayton, Ohio.

The board of directors re-elected R. A. Hart, Executive Vice President of the Colgate-Palmolive Company, New York, as Association Vice President for the East; A. W. Schubert, Vice President of Emery Industries, Inc., Cincinnati, Vice President for the Mid-West; A. C. Pelletier, Chairman of the Board of the Purex Corporation, South Gate, Calif., Vice President for the West.

Also, N. S. Dahl, General Manager of the John T. Stanley Company, New York, treasurer; M. A. McManus, Comptroller of the Lever Brothers Company, New York, assistant treasurer; and Roy W. Peet, Secretary of the Association, New York.

Abstracts of some of the papers follow:

Glycerine, a Versatile Medium in Cosmetic Formulation

Paul G. I. Lauffer
Director of Research
Northam Warren Corp.

I consider glycerine to be the most versatile of all materials used in cosmetics and other toilet preparations. Certainly water is used in a greater number of preparations, but glycerine is used for more different reasons.

In attempting to enumerate the functions of glycerine, the following certainly must be included: Humectant, Plasticizer, Spreading agent, Lubricant, Emollient, Solvent, Binder or adhesive, Oil and solvent barrier, Foam stabilizer, Viscosity increaser, Sweetener.

The effectiveness of glycerine as a humectant is related to its ability to tie up water as a hydrate, and thus to hold some water in a preparation even in atmospheres of rather low humidity. Most other humectants suitable for use in cosmetics also depend on hydroxyl groups for their hygroscopic properties. When rated on the basis of power to hold water against an atmosphere of 50% relative humidity, some other humectants have the following percentages of glycerine's effectiveness: propylene glycol 90, sorbitol 65, polyglycol-400 55, dipropylene glycol 55. It will therefore be seen that none of these materials equals glycerine in ability to hold moisture, in the absence of other ingredients.

There have been no thorough studies to determine to what extent glycerine can augment, replace, or improve the moisture-attracting function of these natural substances. Nevertheless, many considerations add weight to the opinion that glycerine is a desirable ingredient of many cosmetic preparations on account of its emollient effect. More basic research needs to be done on the emolliency of glycerine.

The adhesive properties of glycerine are exploited by the cosmetic chemist in two distinct ways. He uses glycerine to hold solid particles together in a cosmetic product, and he uses it to hold the solid particles on the skin after they have been applied.

In shampoos and in shaving creams, glycerine exerts a desirable stabilizing effect upon the small bubbles constituting the foam or lather. Not in itself a foaming agent, glycerine can greatly

lengthen the life of a bubble, as can be easily demonstrated by adding it to a soap solution for blowing bubbles with a pipe.

Another cogent reason for favoring glycerine in cosmetic formulation is its matchless position as an almost unchallengeably harmless ingredient. The word "almost" is used advisedly, for in today's atmosphere of legislative fanaticism it may be illegal to say that anything is harmless.

For many years, glycerine has been a standard and reliable ingredient of numerous products. Its value can be referred to surprisingly diverse functions, several of which may cooperate in a given preparation to make its summed effect indispensable.

Glycerine and its Derivatives in Modern Cosmetics

S. J. Strianse

In recent years, a good deal of research in cosmetic product development has been concentrated in the area of exploring all the aspects of cosmetic technology so that novel, effective, and superior products could be developed. In addition to investigating all the potentials of the conventional cosmetic systems, new systems have been sought for with an eye toward doing an old job better or perhaps even introducing new overall effects.

We find glycerine adding significantly to the viscosity of many cosmetic systems.

Glycerine of itself is not a gellant but when reacted with starch or gelatine, solid translucent gels are formed.

As a plasticizer, glycerine ranks high in cosmetic formulation. Film formers, such as natural and synthetic gums, are made more flexible by the addition of glycerine.

When considering glycerine as a solvent, I agree with Kalish's statement that "as a solvent, glycerine shares the universality of water and ethyl alcohol."

Glycerine and its derivatives have played diversified roles in the detergent field.

Glycerine has found its way into the sunscreen area by way of a most successfully employed derivative; namely, the glyceryl ester of para-aminobenzoic acid. This agent has been widely used because of its low irritation potential and maximum protection in the erythema producing spectral region.

It has been reported by some that the outstanding hygroscopic property of glycerine has endowed it with sufficient dehydrating power to be antiseptic. Although this may be true, it is rarely used alone for this purpose. It has, however, been more widely used as an antibacterial agent when combined with boric acid, phenol, iodine and thymol.

Since 60.8% of human sebum is accounted for by triglycerides and free fatty acids (both saturated and unsaturated), it becomes evident that glycerine and glycerine derivatives would be the most natural agents to use in developing cosmetics intended to soften the skin.

If there is any trend in cosmetic development, it might be in the direction of producing crystal clear solid systems. In keeping with this there is a further need for alcohol gellants that will produce crystal clear solid systems. A glyceride might well produce this effect.

Glycerine in Cosmetics—Some Relationships to the Biology of the Skin

Fred H. Snyder*

The long use of glycerine in cosmetic products is ample, but empirical, evidence of its value; that glycerine has a beneficial effect on the skin can scarcely be questioned. However, the nature of this benefit, from the biological standpoint, has begun to receive careful attention only in recent years. The reason for this is simple: our understanding of the chemistry and physiology of the skin is just reaching the point where quantitative investigations can be carried out on the influence of a variety of materials on skin condition. Unfortunately, the literature does not yet abound with reports of studies dealing with the action of glycerine on the skin. At this time, one can only describe some of the methods that are now available, make a few references to work dealing specifically with glycerine, and indicate some directions that may provide useful information in the future.

When the various kinds of evidence are brought together, it is possible to construct an integrated but over-simplified picture of the relationship of the skin to its environment, with special reference to its water economy. The stratum corneum is separated from the underlying epidermis and dermis by an effective "barrier membrane," that restricts the rate of transfer of water outward to the cornified epithelium. This tissue requires a certain minimum water content in order to retain its softness and flexibility, and it is to a considerable extent at the mercy of its external environment. The stratum corneum does, however, contain a material, probably a mixture of at least several compounds, that is capable of holding considerable quantities of water; this material aids directly in keeping the skin surface pliable, and it may also act as a reservoir to supply water to the true keratin of the stratum corneum. Keratin from which the lipides and water-soluble components have been removed loses its water rapidly when the humidity falls below a certain point; a transfer of water from other components to keratin under these conditions seems not only helpful but plausible.

The role that glycerine, and other cosmetic ingredients for that matter, can play in this important phenomenon is still unknown. There are few relevant reports in the literature, and these have dealt with only the simplest systems. Methods have been described, and there are sure to be others developed, which will be very useful in further exploration of this problem. It seems very likely that glycerine exerts its beneficial effect on the skin, at least in part, as a result of its participation in the kinds of biological mechanisms described here; the nature of its contribution remains to be clarified. The door is wide open for those who would know more about the part that cosmetic components and finished products may play in helping the skin to serve one of its useful functions.

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The Latest Russian Drugs

Dr. Robert M. Leonard—The educational side of pharmacy has been Dr. Leonard's career almost from the time he received his B.S. in pharmacy from Idaho State College in 1944. After serving his apprenticeship in Idaho and Utah he became a registered pharmacist in 1945 and then turned to the teaching field. From teaching assistant at the University of Minnesota college of pharmacy (1945 to 1947) he has risen to the post of assistant dean and associate professor of pharmacology and pharmacognosy at George Washington University school of pharmacy. Added highlights of his career include a three-year fellowship from the American Foundation for Pharmaceutical Education and his Ph.D., received in 1953, from the University of Minnesota.

by ROBERT M. LEONARD, Ph.D.*

THERE has been a paucity of reliable information regarding the quality and quantity of drugs being produced by the pharmaceutical industry of the U.S.S.R. For example, Field[1] has written on the history, organization, training of personnel and services of manufacturing and retail pharmacy but points out that he did not examine questions of quality and quantity because of lack of sufficient data. McKeen[2] reported on economic and propaganda phases of Russia's drug industry and included some unofficial information on the quality, packaging and cost of a few antibiotics. These and similar reports do not disclose whether the drugs described in the Russian medical journals are plentiful and available for general distribution, or whether they are limited to laboratory and clinical investigation.

An interesting insight into truly representative Russian drugs may be possible by examining some officially prepared brochures distributed at the Soviet Pavilion at the Brussels Universal and International Exhibition of 1958. A set of these brochures[3] describing Russian drug products leads one to speculate as to why these particular drugs were selected by the U.S.S.R. to be presented to the eyes of the world.

A paper band, decorated with the painting of a

*Presented to the District of Columbia Pharmaceutical Association and the City of Washington Branch of the APhA at Atlantic City, N.J., June 24—26, 1959.

*Reprinted from the Journal of the American Pharmaceutical Assn., Vol. 20, No. 10, October 1959, Practical Pharmacy Edition.

rose in the center and bounded by the Russian word for vitamin, enclosed 27 brochures in this set. The inner side is decorated with the painting of a bottle and package, apparently containing vitamin C, bounded on either side by a Russian and English translation stating the value of ascorbic acid. The latter concluded with "the vitamin industry of the Soviet Union is constantly expanding the production and widening the range of preparations containing synthetic ascorbic acid. The vitamin industry of the Soviet Union, which is staffed by highly trained chemists, engineers and workers, has developed and introduced the most up-to-date and improved methods for the synthesis of ascorbic acid, based on the latest scientific and engineering developments."

The cover of each brochure is individually designed and decorated. For example, most of the brochures *(see cuts)* which describe products of plant origin are faced with colorful paintings of the respective plants. Other brochure covers are decorated with paintings of the packaged product, chemical structures, titles and other designs. The monographs describing the drugs include the original Russian plus translations in French, English and German. Each monograph is headed by the drug title in the respective language subtended by the Latin title.

More than half of the monographs include a structural formula and, usually, a chemical name or a description of the source of the drug. Physical properties are listed but sometimes describe the final dosage form rather than the raw chemical. The main portion of most of the monographs is titled "Uses, Administration and Dosage." Contraindications are listed separately and titled as such. "Supply" and "Storage" are the final headings. Under the storage requirements several of the drugs are classified either as List A or List B. The List A drugs should be kept "under lock and key" and the List B drugs should be "preserved with precautions."

The products described in the brochures represent a number of drug categories but notably absent are antihistaminics, diuretics, glucocorticoids and psychotherapeutic adjuncts. In fact, a Soviet scientist, writing in *Izvestia*, recently criticized Russia's pharmaceutical industry because it does not produce glucocorticoids, forcing the physicians to turn to outside sources such as western embassies to procure them.[4]

It is interesting to note that, counting two antibiotics, ten of the 27 drug products or about 37 per cent are obtained from plants. About 40 per cent of the preparations in the Soviet Pharmacopeia are of plant origin. Research and development of plant drugs is encouraged because of their availability and economy. Typical is the anticholinergic drug, grimalin, extracted from the roots and leaves of a Scopola plant growing in the Central Himalayas and cultivated in the province of Moscow.[5]

Starting with the brochure describing the Russian synthetic analgesic, Promedol, we find a drug chemically and pharmacologically similar to alphaprodine (Nisentil), meperidine (Demerol) and anileridine (Leritine). Promedol is 1,2,5-trimethyl-1-4-phenyl-14-propionoxypiperidine hydrochloride, whereas alphaprodine is the 1,3-dimethyl product. Reports of the experimental work with Promedol began appearing in the literature in 1954 and Guseva[6] found the analgesic action to be considerably lower than morphine in experimental heat burns. In addition to the usual clinical indications for this and similar analgesics, the brochure states that "in obstetrics promedol is used for anesthesia and speeding up labor." For this purpose two to three ml. of a one or two per cent solution is injected subcutaneously. Although it wasn't included in the government brochures, Anadol is Russia's alphaprodine.[7]

A systemic antibiotic is exemplified by Albomycin but the monograph does not include its formula or derivation. According to Brazhnikova,[8] albomycin is an antibiotic isolated from cultures of *Actinomyces substropicus*. The similarity of this name to one of our trade names is confusing but novobiocin (Albamycin and Cathomycin) is obtained from cultures of *Streptomyces niveus* or *S. spheroides*. Albomycin was introduced about 1952 and is indicated primarily for staphylococcal and pneumococcal infections with lesser value in streptococcal infections.

A topical antibiotic described is gramicidin S

(gramicidin C). According to a 1946 report by Sharkova and Brazhnikova[9], there are four available strains of the soil bacterium, *Bacillus brevis*, which produce gramicidin S. These authors proposed that the strains be named "var. G.B." which stands for Gauze and Brazhnikova. Gramicidin S differs chemically from gramicidin D in the number of amino acid radicals making up the cyclopeptides, five and four, respectively. According to early Russian reports, gramicidin S is superior to gramicidin D and tyrothricin against staphylococci.

Diocide is the name given to a germicidal solution prepared by dissolving two different tablets in water. One tablet is made up of 350 mg. of "ethanolmercurichloride" (possibly ethylmercuric chloride or Ceresan) and the other of 330 mg. of N-cetylpyridinium (Ceepryn) bromide. Korchagina[10] reported in a Russian journal of surgery that five-minute treatments with 1:3000 solutions of Diocide enables a surgeon to operate without gloves.

An antimalarial, Aminoacrichine (aminoacrichin; aminoacriquine; aminoakrikhin), is chemically similar to quinacrine (Atabrine), differing only by the addition of an amino group on carbon 7 of the acridine nucleus. In addition to its antimalarial properties, the drug is said to be effective in the treatment of taeniasis and trichomoniasis in man and theileriasis in cattle.

A second antiprotozoan proposed for the treatment of trichomonal diseases is Trichomonacide. It appears to be a chemical hybrid of several of our antiprotozoan compounds, i.e., hydroxystilbamidine, chloroquine (Aralen) and primaquine. The drug is administered both locally and systemically in the treatment of trichomoniasis.

Two antituberculotics, Phthivazid (phthivazide; phthivazid; vanizide) and Saluzide (saluside; salusid), are included in the brochure and were introduced clinically in 1955 and 1956, respectively. Both drugs are chemically and pharmacologically related to isoniazid. The structural formula and the chemical name "Isonicotinoilhydrazon 4-oxi-3-methoxibenzaldehyde" are included in the brochure for Phthivazid.

Saluzide, is described as a derivative of isonicotinic acid hydrazide. It was synthesized in 1952 by Shchukina and Sazonova.[11] An unofficial source refers to Soluble Saluzide as the diethylammonium salt of 2-carboxy-3,4-dimethoxybenzolisonicotinylhydrazone.[12] In military tuberculosis and tuberculous meningitis it is recommended that streptomycin be combined with therapy.

Cuthizone (cuthizon; kuthison; kutizon), *p*-isopropylbenzaldehyde thiosemicarbazone is described in the government monograph as shortening the duration of all forms of virus influenza in adults or in children. It is chemically similar to the antituberculotic, *p*-acetylaminobenzaldehyde thiosemicarbazone (Tibione) and was compared with the latter drug by Makeeva and Pershin[13] in 1953 and found to possess higher tuberculostatic activity. Special care is cautioned for administration to patients with liver disease.

Four antispasmodics are represented in the collection, three of which are chemically related to the anticholinergics, adiphenine (Trasentine) and benactyzine (Suavitil). The fourth antispasmodic is a tropinic ester of diphenylacetic acid, chemically similar to benztropine (Cogentin). Like benztropine, this latter drug, Tropacine, is used in the treatment of parkinsonism and similar diseases accompanied by increased muscle tone. It was studied experimentally for the treatment of nervous disorders in 1955 as reported by Roccin and Abozinym.[14] The government brochure lists spasms of smooth muscles of the internal organs, gastroduodenal ulcer and bronchial asthma as other clinical indications.

Aprophene (aprophen), first of the three aforementioned antispasmodics, contains a methyl group in place of a hydrogen atom and hydroxyl group in adiphenine and benactyzine, respectively. It produces typical atropine-like side-effects.

The remaining two antispasmodics, Diprophene (diprophen; diprofen) and Tiphene (tiphen), are both esters of diphenylthioacetic acid, the dipropylaminoethyl and diethylaminoethyl esters, respectively. In 1957, Liberman[15] reported on the laboratory and clinical investigation of aprophene and diprophene. Tiphene is chemically similar to adi-

phenine (Trasentine) except for the sulfur atom in place of the oxygen atom in the diphenylacetic acid of the former. Diprophene is used as an antispasmodic in vascular spasms, especially of the limbs, and in spastic conditions of other smooth muscles.

The next two products are members of the parasympathomimetic group of drugs. Armine is described as an ester of alkylphosphoric acid and a cholinesterase inactivator. Like isoflurophate (diisopropyl fluorophosphate; DFP; Floropryl), it is used to produce miosis in the treatment of glaucoma. The monograph suggests that Armine be used in combination with pilocarpine to achieve a more complete effect. It is capable of producing side-effects similar to those of isoflurophate. Aluf[16] reported on the pharmacology of Armine in 1955.

The second parasympathomimetic, galanthamine, is an alkaloid first isolated from the tubers of *Galanthus Woronowii* Losinsk. (Fam. *Amaryllidaceae*)[17] in 1952[18] and later reported to possess anticurare activity.[19] Its chemical structure is similar to that of the alkaloid, lycoramine, which is present in *Lycoris radiata* Herb. (Fam. *Amaryllidaceae*[20]). Galanthamine differs by the presence of an ether bridge, an ethyl group in place of a methyl group, one less hydroxyl group and an additional double bond. Mashkooskii[19] was impressed by the great difference between this structure and those of other anticurare drugs. The brochure describes galanthamine hydrobromide as being used in myasthenia garvis, myopathy, after-effects of poliomyelitis, sensory and motor disturbances allied to diseases and traumatic injuries of the nervous system, polyneuritis, and radiculitis. Epilepsy, hyperkinesis, bronchial asthma, stenocardia (angina pectoris), and bradycardia are listed as contraindications.

The next three drugs possess antihypertensive properties. The first drug, phenatine (phenatin), a condensation product of phenamine and nicotinic acid, is the phosphate of beta-phenyliso-propylnicotinamide. Guchok[21] compared the pharmacological properties of phenatine and methylphenatine and found that methylation increased the hypotensive action and the toxicity. Phenatine is chemically related to beta-pyridyl carbinol (Roniacol) and nikethamide (Coramine) and stimulates the central nervous system like the latter in addition to being hypotensive like the former. Arbuzov and Anosova[22] observed a leucopoietic action in rabbits and claimed that phenatine prevented lethal benzene poisoning and shortened the recovery period. The government brochure states that phenatine is used in the early stages of hypertension and as a C.N.S. stimulant.

A second antihypertensive drug, salsolidine (salsolidin) is an alkaloid found with salsoline in the plant, *Salsola Richteri* Karel.[23] (Fam. *Chenopodiaceae*). The alkaloid is described as "chloral hydrate 1-methyl-6,7-methoxytetrahydroisoquinolin." An unofficial source[24] lists salsolidine as 1,2,3,4-tetrahydro-6,7-dimethoxyr-1-methylisoquinoline. Salsoline differs only by the presence of a hydroxyl group instead of a methoxy group on carbon 6. Salsolidine hydrochloride is described in the brochure as dilating the peripheral blood vessels and lowering the blood pressure.

The third antihypertensive agent is a ganglionic blocking alkaloid, nanophyne (nanophyn; nanophine; nanofin). The alkaloid was isolated from the upper parts of the plant *Nanophyton erinaceum* Bunge (Fam. *Chenopodiaceae* by Kuzovkov and Menshikov in 1950.[25] In 1957, Syrneva[26] reported that nanofin, a synthetic racemic derivative of one of the aikaloids of *Nanophyton erinaceum,* possesses ganglionic blocking activity five to seven times greater than tetraethylammonium chloride (Etamon). Nanophyne is used for the "treatment of hypertension in the one and two stage and for treatment of dermatoses of neurogenous origin."

Another plant drug, cytisine (cytisin; tsitizin), an alkaloid obtained from the seeds of *Cytisus laburnum Linn.* and *Thermopsis lanceolata* R. Br. (both Fam. *Leguminosae*), is described as an effective respiratory stimulant that is also capable of raising the blood pressure. Cytisine was first identified in 1931 and Zachowski[27] reported on its pharmacology in 1938. Mitchell[28] reported on 10 cases of laburnum poisoning in children due to its cytisine content and noted a resemblance to the effects of nicotine. Cytisine is used "in cases of reflex respiratory arrest during operations, in traumas and different intoxications (by CO, HCN, narcotics, etc.) and infectious diseases; in shock and collaptoid states, respiratory and circulatory inhibition in the postoperative period; in asphyxia of the newborn."

Elatine, an alkaloid obtained from *Delphinium elatum* Linn. (Fam. *Ranunculaceae*), possesses skeletal muscle relaxant properties resembling tubocurarine. Its curariform activity was studied in 1956[29] along with the smooth muscle antispasmodic effects of eldeline, another alkaloid of this plant. Elatine is administered orally for "lessening the pathologically increased motor tone, due to vascular traumatic and other injuries of the brain and spinal cord, in hyperkinesis, etc." The action is antagonized by physostigmine and neostigmine.

Two cardiotonic glycosides are represented in the collection of brochures. Erysimin is a crystalline glycoside obtained from the plant *Erysimum cr-nescens* Roth (Fam. *Cruciferae*). Its onset and degree of action are likened to strophanthin, and it is not cumulative. Loshkarev[30] noted the similarity to strophanthin and described its action as lasting 24 hours and thus superior to the former. It was tried clinically[31] and is used in the treatment of cardiac failure.

Neriolin, the second cardiac stimulant, is described as "a crystalline glucoside extracted from the leaf of the oleander, *Nerium oleander*" Linn. (Fam. *Apocynaceae*). According to one source,[32] neriolin is synonymous with oleandrin. Straub reported on the extraction of oleandrin as early as 1918.[20] Oleandrin contains an aglycone with the same empirical formula and melting point as gitoxigenin[33,34] which is present in a number of species of Digitalis, including *purpurea* Linné and *lanata* Ehrh. According to the brochure, neriolin is similar to digitalis in action, but acts much faster and has less pronounced cumulative action than the latter. It is used for the "I and II forms of acute and chronic inadequate blood circulation; especially

for cardiac disease of the mitral valve with perpetual arrhythmia."

Two leucopoietic agents are included in the brochures. Leucogen (leikogen), described as "2-(alphaphenyl carbethoximethyl)-thiazolidin-4-carbonic acid," and Thesan, which is unidentified chemically or as to its source. Both are alleged to stimulate leucopoiesis in toxic and infective leucopenias or in leucopenias which develop as a result of chemotherapy or radiotherapy of malignant neoplasms. Leucogen is also used propylactically during the course of roentgen or radium therapy.

An antineoplastic drug, colchamine, is described as a secondary base extracted from the plant, *Colchicum speciosum* Stev. (Fam. *Liliaceae*). The compound is illustrated by a rather doubtful looking structural formula. Colchamine is said to cause inflammatory and necrotic symptoms when it comes in contact with the skin and, also, may be absorbed through the skin causing general intoxication. It is prepared as an ointment containing 0.5 per cent colchamine, synthomycin (chloramphenicol; Chloromycetin; etssintomitsin; syntomycin; sintomitsin; etssyntomycin), thymol, Emulgator (emulsifying agent), ethyl alcohol and water. The ointment is used "for the treatment of the exophytous and endophytous forms of cancer of the skin in the first and second stages of the disease."

Cramer and Brodersen[35] in 1944 studied the topical application of colchicine ointment to papilloma of the genital tract, recurrent mammary cancer, and basal cell carcinoma, but it did not inhibit the spread by the lymphatics. There are numerous reports in the literature on the experimental use of colchicine in treating mouse and rat tumors as early as 1937. At the present time the application of podophyllin to certain papillomas, especially condylomata acuminata, is about the extent of this type of therapy in the United States and has not replaced roentgen therapy and surgery.

Betasine (betasin), or diiodotyrosine, is included in the brochures and is said to be used for the "treatment of patients with an increased function of the thyroid gland (mild and intermediate forms of thyrotoxicosis." Physiologically, this compound is the precursor of thyroxine and triiodothyronine (liothyronine; Cytomel). According to Sollmann,[35] diiodotyrosine has very little pharmacological action as such and it tends to mitigate the phenomena of clinical and experimental hyperthyroidism by acting chiefly as a source of iodine.

The final product in the set of selected Russian drugs is named Urozine and the tablets are composed of 220 mg. of piperazine phosphate, 100 mg. of lithium benzoate and 250 mg. of urotropin (methenamine). According to the monograph, the preparation is used in gout, renal and urinary calculi, and chronic polyarthritis.

Piperazine possesses no uricosuric properties but is an effective anthelmintic. It was introduced for the treatment of gout during the turn of the 19th century because it was found to be an excellent solvent for uric acid *in vitro*. As early as 1916, Haskins reported that such a small fraction appeared in the urine that its solvent power for urate stones was even less than that of sodium bicarbonate. The lithium ion has no rational use in therapeutics and is relatively toxic. The latter fact was sadly demonstrated when lithium chloride was used indiscriminantly as a substitute for sodium chloride.

Lipowitz[35] in 1841 suggested the use of lithium carbonate in the treatment of gout because it was about four times more effective than sodium carbonate as a solvent for uric acid. It was introduced clinically for this purpose by Ure in 1844 and by Biswanger in 1847. It was abandoned as a therapeutic agent in the treatment of gout when it was finally realized that the solvent action of lithium does not take place under the conditions of the body or urine. Methenamine and related compounds were advocated as urate solvents by Stevens and May in 1911 and Haskins in 1915 because the formaldehyde dissolved uric acid *in vitro* even in the acid necessary for the formation of formaldehyde.[35] However, in 1916, Hanzlik reported that such action was imperceptible with ordinary compounds contained in Urozine have no rational basis in the treatment of diseases of abnormal uric acid metabolism.

The preceding completes the discussion of the drugs described in the brochure distributed by the Soviet Union at Brussels. How do they compare with 27 drugs and dosage forms that you would select to represent the highest achievements of our capitalistic pharmaceutical industry? ■

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The Therapeutic Potentialities of Triglycerides

S. G. KNIGHT*

DURING THE past year formulations containing glycerol triacetate (triacetin) as the active ingredient have been used with great success in the treatment of superficial mycotic infections. Basically the use of triacetin is merely a unique way of providing a constant level of mildly fungistatic acetic acid and, as a consequence, a lowered pH. The acetic acid is liberated from the triglyceride after enzymatic hydrolysis of the ester bond by esterases of lipases from various cells. This paper deals with certain aspects of this hydrolysis and its consequences.

Prior Art and Patents

The use of acetic acid, usually in the form of vinegar, as an aid to healing goes back to antiquity. The Assyrians in the era of 600 to 700 B.C. reportedly used vinegar in the treatment of ear diseases (1) and the "Jewish Encyclopedia" mentions the medicinal use of vinegar in a number of ways. "The Encyclopedia Britannica" states that Hippocrates used vinegar medicinally in 400 B.C. and of course the Bible records the use of wine, probably vinegar or "soured wine," for anointing wounds. "The Oxford English Dictionary" points out that in 1600 vinegar was known to be very good for healing burns, and in World War II, a solution of one-half per cent acetic acid in saline glycerol was used in a Naval hospital in the Pacific to treat burns that were large enough to require skin grafts (2). Also, in modern times, Burrow's solution or variations of the basic aluminum acetate-acetic acid formula has been used for a variety of purposes. Most of these usages are directed toward combating bacterial infections, often gram-negative bacteria. As a therapeutic fungicide acetic acid has had comparatively little usage, undoubtedly because the higher fatty acids are somewhat more active.

Previous to the past year, triacetin has not been formulated into chemotherapeutic agents. However, because of its low toxicity, it has been suggested as a nonaqueous solvent for chlorine releasing compounds such as chloroamide, an antimustard gas protective (3). The rights to develop glycerol triacetate and related glycerides as chemotherapeutic agents have been assigned to the Wisconsin Alumni Research Foundation at Madison. The Foundation now has a number of patent applications on these developments.

Body of Report

A few years ago, in my laboratory, there was a research project aimed at studying the over-all kinetics of the formation of ketones from triglycerides by *Penicillium roqueforti*. The oxidative conversion of fatty acids to a 2-ketone with the concurrent loss of the carboxyl group is a reaction unique to *Penicillium roqueforti;* and since these ketones are responsible for the characteristic aroma and flavor of mold ripened cheese, it is a reaction of considerable economic importance. In many experiments the enzymatic hydrolysis of the triglyceride and the oxidation of the newly liberated fatty acids would proceed nicely at first only to have the oxidative part of the reaction stop with rather sudden abruptness. It took some time to determine that this happened only when two events coincided: the fatty acids had to be liberated from the triglyceride faster than they were oxidized and the buffer capacity of the medium had to be poor enough at pH 6.8 so that a pH of around 5.0 was attained. Under these conditions the fatty acid existed largely in the nondissociated form and the cessation of oxidation was a consequence of the well-known fungicidal activity of fatty acids in acidic environments.

For the time being then our interest changed from the over-all reaction to the first step: the enzymatic liberation of fatty acids from triglycerides by the lipases. The enzymes involved here are the well-studied lipases or esterases which hydrolytically split the ester bonds between fatty acids and glycerol. Since these esterases are abundantly present in most of the common saprophytic fungi it seemed reasonable to assume that in the presence of a triglyceride of a fungistatic fatty acid the mold would virtually inhibit or kill itself. The use of such a triglyceride instead of the free fatty acid as a fungistatic agent seemed to offer some advantages: the glyceride is neutral, relatively odorless, much more potential acid than free acid could be used, and even after hydrolysis the pH would not be lower than around pH 4 where the esterase should become inhibited. This reasoning was put to test in the laboratory in different ways using different triglycerides and a number of saprophytic fungi and found to be true. However, in practical tests none of the glycerides proved effective enough to warrant further work at the moment; we cannot explain this lack of activity under practical tests.

We assumed also that the dermatophytic fungi would be inhibited by triglycerides, since they are inhibited by the fungistatic fatty acids, and again a simple laboratory test showed this to be true. We then had formulations or dosage forms of glycerol triacetate made in the University of Wisconsin Department of Pharmacy and submitted them to Dr. Sture A. M. Johnson of the University Hospitals Department of Dermatology for clinical testing against typical infections by the superficial dermatophytes. The outcome of these early tests was very gratifying indeed; the percentage of cures as judged by freedom from symptoms and negative microscope examinations of scrapings was about 90 per cent and there was no irritation or sensitivity.

Experimental

The dermatophytes used in this work were all fungi imperfecti and all are capable of producing specific "ringworm" infections or tineas. The common dermatophytes were obtained from the University Department of Dermatology, the others from the Communicable Disease Center at Chamblee, Georgia. The cultures were maintained and tested on Sabouraud's medium.

Table I shows the degree to which these fungi are inhibited when triacetin in varying amounts is incorporated into Sabouraud's medium.

It is rather difficult to compare the response of different fungi to triacetin because they grow at varying rates

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TABLE 1.—THE INHIBITION OF FUNGI BY TRIACETIN IN SABOURAUD'S DEXTROSE AGAR

Fungus	Diameter of Colony in mm. Triacetin, Per Cent 0	0.05	0.1	0.25	0.5
Epidermophyton floccosum	57	40	19	3	0
Trichophyton mentagrophytes	84	81	66	12	0
Trichophyton rubrum	71	73	59	9	0
Trichophyton tonsurans	34	29	17	5	0
Trichophyton verrucosum	21	13	11	0	0
Microsporum audouini	80	71	52	7	0
Microsporum canis	79	73	37	14	0
Microsporum gypseum	74	70	47	20	3
Candida albicans	20	22	20	16	9

and the measurements of colony diameter were made at different times. There was considerable variation in the response to triacetin, but in general inhibition became apparent at about 0.1 per cent. There was also no obvious relationship between the inhibition and the type of infection typically produced by the various fungi. The effect of triacetin is upon the vegetative or growing cells; the spores of *Trichophyton mentagrophytes* and *Microsporum audouini* have been soaked in triacetin for twenty-four hours and were able to germinate when washed and placed on nutrient medium. Two independent attempts have been made to induce certain dermatophytes and *Candida albicans* to grow in higher concentrations of glycerol triacetate or to become resistant to the glyceride. All attempts to induce resistance of the fungi to 0.1 per cent glycerol triacetate have failed; in fact, often the first colony on medium containing the glyceride is about 10 per cent larger than subsequent colonies derived from the first. Likewise attempts to induce resistance by the gradient plate procedure have been negative. It is apparent from these tests that triacetin certainly is not in the antibiotic class in regard to its effective concentration in laboratory tests; but clinically results have been most gratifying. Here again, as many have noted in the past, there seems to be no constant relationship between *in vitro* and *in vivo* activity.

TABLE 2.—THE EFFECT OF BLOOD SERUM ON THE FUNGISTATIC ACTIVITY OF 0.1 PER CENT TRIACETIN

Fungus	Diameter of Colony in mm. Serum Added, Per Cent 0	1	5	10
Epidermophyton floccosum	22	8	0	0
Trichophyton mentagrophytes	70	63	47	32
Microsporum audouini	49	21	18	13
Candida albicans	19	24	17	14

Table 2 shows the effect of blood serum on the fungistatic effect of 0.1 per cent triacetin. The extent of inhibition obtained in the presence of serum is the net result of opposing forces: the stimulatory effect of serum components on the fungus, the inhibitory effect caused by the increased acetic acid released by serum esterase and the inactivation, if any, of the serum on either acetic acid or triacetin. It is apparent that the inhibition caused by the increased acetic acid released by serum esterase was the dominant force. When triacetin and aliquots of serum were incubated together for twenty-four hours before addition to the test medium the results were the same, indicating that serum probably does not bind or otherwise make the triglyceride unavailable for hydrolysis.

TABLE 3.—MILLILITERS *N*/10 ACETIC ACID PRODUCED BY ESTERASES FROM DERMATOPHYTES AND SERUM

Source of Esterase	N/10 Acetic Acid Released in ml. pH 6.5	pH 4.0
Microsporum audouini	15.6	0.4
Trichophyton mentagrophytes	7.3	3.0
Trichophyton rubrum	6.8	5.6
Serum, 5%	4.9	5.6
Medium from *Microsporum audouini* culture	12.2	0.2
Boiled serum and fungi (control)	0	0

Table 3 shows that at least some of the superficial dermatophytes as well as blood serum contain esterase capable of releasing acetic acid from triacetin. Here again the fungi should not be compared, because no attempt was made to use the same number of cells or mass of tissue in each test. It is interesting to note that this strain of *Microsporum audouini* excretes considerable esterase into the medium in which it is growing; if this were to occur in the infection also, the breakdown of epidermal lipids might play a part in the overall infectious process. It is noteworthy also that *Candida albicans* has relatively little of this particular esterase, this may account in part for the ineffectiveness of triacetin formulations in treating superficial candidiasis; plus the fact that the yeast is not quite so sensitive to fatty acids as the truly filamentous fungi.

The effect of pH on the hydrolysis of triacetin by esterases of various origin is shown in Table 4. In general the esterases have a rather broad plateau of maximum activity with rapidly decreasing activity in the region of pH 3.5 to 4.0. Note the eighteen-hour reaction time; these esterases seem to have rather low turnover rates, or the conditions for testing were not optimum. Serum esterase is peculiar in that it has a very broad area of activity and maximum activity is at a comparatively low pH. The skin used in these tests was abdominal skin obtained at postmortem examinations. It should be pointed out that lipase assays, especially over the pH range, are unsatisfactory generally and all these figures are probably more indicative than quantitative.

TABLE 4.—THE EFFECT OF pH ON THE HYDROLYSIS OF TRIACETIN BY ESTERASES OF DERMATOPHYTES, SERUM AND SKIN.

pH	N/10 Acetic Acid Produced in 18 Hr. *T. rubrum*, ml.	*T. mentagrophytes*, ml.	*M. audouini*, ml.	*Serum*, ml.	*Skin*, ml.
3.5	0.3	0.4	0	3.2	0
4.0	1.0	4.1	0.6	6.5	1.3
4.5	2.8	..	1.9	8.0	2.4
5.0	3.3	3.8	4.6	8.3	4.0
5.5	3.9	3.8	6.2	7.6	5.6
6.0	4.4	4.0	11.7	5.6	7.8
6.5	5.1	5.0	12.2	3.4	7.4
7.0	7.8	3.8	12.0	3.3	7.6
7.5	10.8	5.7	12.5	4.5	7.0
8.0	9.4	4.7	9.1	5.0	7.0

Discussion

It is apparent that the lipases of the dermatophytes, serum and skin can hydrolyze glycerol triacetate and that

the hydrolytic enzymes are sensitive to a low pH. This property plus some of the properties mentioned earlier make glycerol triacetate a suitable source of a prolonged and controlled level of acetic acid whenever it is desired in chemotherapy or for the maintenance of acidic conditions on the surface of the skin. Another fortunate characteristic is the lack of toxicity or sensitivity to both the glyceride and acetic acid.

Apparently lipase may or may not be present upon the surface of normal skin, depending upon factors unknown to us. Recently Nicolaides and Wells (4) cited the sebaceous gland duct and hair-shaft canal as the location of lipase in the skin and they presented rather impressive evidence in support of the idea. This might well explain why we obtained erratic results in the search for lipase in skin slices and very consistent positive results in homogenates obtained by disrupting the cells in an electrically driven blender; in the latter, the sebaceous glands and canals were disrupted and the lipase made more available.

We have applied preparations containing triacetin to normal skin surfaces many times but in only roughly one-third of the instances has there been a decrease in pH detectable with pH papers. The decrease in pH stops in the region of pH 5 and since, in our conditions, normal skin is but slightly above pH 5, the decrease is probably just inside the range of reliability of the paper; there seems to be no correlation between the original pH and acid formation. We are just now getting information on triacetin hydrolysis and the pH of dermatophyte infected skin. Most of the infections are *tinea pedis* caused by *Trichophyton mentagrophytes* and *Trichophyton purpureum*. There is no doubt in these infections that the pH of the skin is increased and in even moderately severe infections the pH may be neutral or even alkaline. Also, in these instances triacetin apparently is rapidly hydrolyzed and a pH in the area of 5.0 is obtained; we are surprised that here again the pH does not go lower and we can not yet explain why it does not except, and this seems likely, that the skin is heavily buffered about this point. For the sake of convenience, our tests are made within 20-30 minutes after the first application and it might well be that this is not enough time since hydrolysis may be slowing up as the pH enters the lower area. However, after scanning a rather vast literature on the subject we gather that there is no general agreement on the pH of normal skin except that it is generally somewhat below pH 6. Certainly our tests are not to be considered authoritative. Furthermore, if the biogenesis of free fatty acids is inside the sebaceous gland duct and along the hair shaft canal, the pH of the skin surface might well be secondary and variable compared with the pH in openings beneath the surface.

We were quite impressed with the comparatively high pH of dermatophytic skin but have recently learned from data presented by Rothman (5) that this may be common. Certainly this high pH must contribute to the infectious process as it solubilizes the protein in the microenvironment of the infection. Recently Burack and Knight (6) noted that the dermatophytes in general are very active in deaminating amino acids; the ammonia so released might contribute considerably to the high pH of the area. It might well be that the effectiveness of formulations of glycerol triacetate in treating dermatophyte infections is due to two factors: the inhibitory effect of the free acid upon the fungus and the return and maintenance of the area to a normal lower pH. In view of the findings of Bernstein and Herrmann (7) that the surface of the skin has an elevated pH in certain nonmycotic disorders it would be interesting to see if formulations of glycerol triacetate would provide at least symptomatic relief.

The toxicity, rather lack of toxicity, of glycerol triacetate is noteworthy and undoubtedly accounts for part of its acceptability as a chemotherapeutic agent. The LD_{50}, subcutaneously in rats, is 2.8 ml. per kg. (8). Likewise oral toxicity is low; rats fed a diet containing 55 per cent glycerol triacetate for sixty days increased 90 grams in weight whereas controls increased 140 grams (9). The ester was not stored as such in body fat but was converted first to longer chained, unsaturated fatty acids. Irrigation of the rabbit eye for six minutes with triacetin caused no apparent irritation or damage.

There is an area in the hydrolysis of glycerol triacetate in which some work should be done that is, the spontaneous hydrolysis by water when catalyzed by unknown substances. We have some observations here rather than real experiments. Some of us have made solutions of 25 per cent triacetin in 50 per cent isopropanol and have found them to be stable for at least three years; others have noted considerable hydrolysis in a matter of a few months. Two dermatologists have stated that triacetin when formulated in a base of their choice underwent spontaneous hydrolysis; yet another has formulated it extensively with no notice of hydrolysis. It is likely that there are nonenzyme catalysts, organic, inorganic or both, which when present with available water can cause hydrolysis.

Another piece of information that might be useful is the extent and rapidity of penetration into the skin. We have always assumed that penetration was good because glycerol triacetate is very soluble in lipids and about 7 per cent soluble in water; this belief has been fortified by the statement of Rothman (10) to the effect that lipid soluble substances penetrate quickly especially if they are somewhat soluble in water. Is it likely that triglycerides of higher fungistatic fatty acids will not be as good chemotherapeutic agents because they do not have such fortunate solubility characteristics? We hope to know the answer in the near future.

Conclusion

On the basis of the hydrolysis kinetics by esterases, its toxicological properties and the results of clinical trials, it would seem that glycerol triacetate and perhaps related compounds offer considerable promise as chemotherapeutic agents, especially in superficial mycotic infections and where a lowered skin pH is desired.

Summary

Preliminary clinical trials showed that formulations of glycerol triacetate were useful in the treatment of superficial mycotic infections. Laboratory work showed the compound to be inhibitory to a number of dermatophytes and evidence was obtained that it was hydrolyzed by esterases from fungi, serum and skin; the hydrolysis rate became vanishingly small as the freed acid created a pH in the region of 4 to 5. Clinical reports and a limited literature on the subject suggest a very low order of toxicity for glycerol triacetate.

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Evaluation of Deposits from Pressurized Sprays

A. H. YEOMANS and R. A. FULTON*

The particles in the common liquefied gas-propelled sprays have certain physical properties that must be considered when a pressurized product is being developed for applying a deposit to a surface. Even though the product is properly formulated and packed, the user must fully understand the proper method of application to obtain the maximum benefits. The directions for use should be clearly stated.

In testing these sprays over a number of years we have found that to obtain maximum deposit on a surface the dispenser must be held at the correct distance during spraying. When it is held too close, the particles splatter from the surface and the portion that does deposit is heavy over a small area, causing running and an unsightly residue. When the dispenser is held too far away, the particles do not have enough momentum to penetrate the air cushion that develops in front of a surface when a volume of spray is directed toward it. The correct spraying distance must be determined when the product is in the developmental stage. If the tests show that the maximum deposit occurs at a distance that is unsuitable for use, then the formulation, valve, and nozzle should be changed. The correct spraying distance should be emphasized in the instructions for use on the container.

A simple deposit test consists in directing the spray toward a surface that can be weighed before and after spraying. A heavy paper can be used. It is folded immediately after spraying to prevent rapid evaporation. By determining the weight deposited from a known amount of spray, the most efficient spraying distance can quickly be determined. The paper should be left exposed to the air before spraying long enough so that it can adjust to the humidity. Changes of humidity in the air should be kept to a minimum during a series of tests.

We have found a large paper drum, 2 feet in diameter and 3 feet long, useful for making the deposit tests. A sketch of the drum unit is shown in figure 1. Vertical (*A*) and horizontal (*B*) test surfaces are set up within the drum (*C*), which is placed in a horizontal or vertical position depending on the desired distance from the spray. The spray is applied to the surface by reaching into the drum with the dispenser (*D*) and releasing the valve. If it is desired to determine the weight of the particles in the air, they may be removed by an electrical precipitator (*E*) on a previously weighed plate. Several small commercial electrostatic precipitator units now available for air-pollution studies are satisfactory for this purpose.

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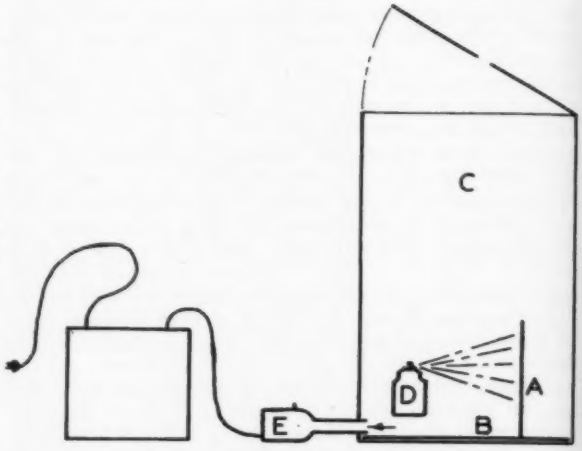


Figure 1. Sketch of drum for evaluating particle deposition from pressurized sprays.

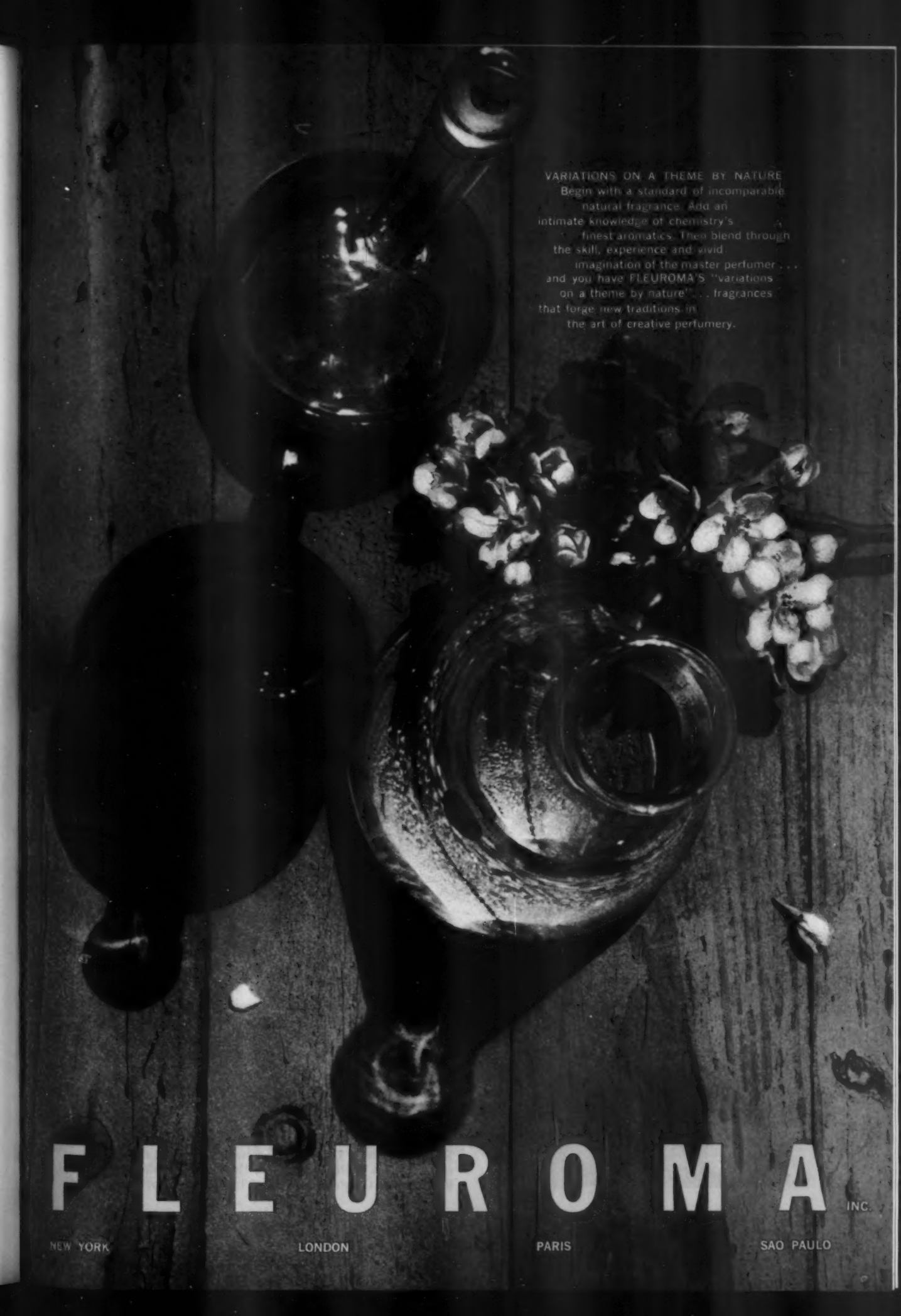
Some factors that help to obtain efficient deposits at great distance are:

(1). Large nozzle orifices.
(2). Narrow spray angle.
(3). Large particle size.
(4). Nonvolatile or slowly evaporating formulations.

A deposit of 90 percent of the formulation, excluding the liquefied gas, at a distance of 12 inches from the nozzle was obtained from an aerosol dispenser with a formulation pressure of 24 pounds gage at 75° F., a single nozzle orifice with an output of 1.5 grams per second, a spray angle of 12 degrees, and a particle size of 75 microns mass median diameter. This is about the maximum that can be obtained, and 75 percent deposit is usually considered satisfactory.

So-called "mechanical breakup" tips are now coming into use for a number of products. The characteristics of the spray released from them are different from those discharged from a simple drilled orifice. The liquid is whirled through offset flanges and is emitted as a wide-angle spray (about 20-60 degrees) of small particle size. These small particles have less momentum than they would if discharged from a simple drilled orifice. Products of this type must be held closer to the surface to obtain maximum deposit.

Pressurized products developed for special purposes should be clearly labeled so the user will apply them for maximum benefit. ■


VARIATIONS ON A THEME BY NATURE
Begin with a standard of incomparable
natural fragrance. Add an
intimate knowledge of chemistry's
finest aromatics. Then blend through
the skill, experience and vivid
imagination of the master perfumer . . .
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PACKAGING & PROMOTION

1

2

3

PRINCE MATCHABELLI—1

As new as Spring 1960 is Prince Matchabelli's new SPRING FANCY. Only the name is the same as the previous Prince Matchabelli cologne-of-the-season. Pictured above are two products in the five-item line . . . Spring Fancy Cologne (6 oz. $2.00) and Spring Fancy Dusting Powder (6 oz. $2.50). The new bottle-shape for the liquid cologne has a fluted, golden cap. The cylindrical dusting powder box has a see-through cover to display the light green, floweret-tabbed fluffy-puff. The packaging captures the spirit of Spring bedecked with new-green leaves and garlands of budding blossoms.

BOURJOIS—2

Bourjois, Inc. has just announced the return of one of its primary annual events: the EVENING IN PARIS Deodorant Promotion. Duplicating the 1959 policy, the EVENING IN PARIS "Roll-R" Lotion Deodorant will rejoin this year the established EVENING IN PARIS Deodorant Stick at the special price of "2 for $1.00". Packed two of a kind to an individual boot, the Deodorant Duo combinations represent a $1.50 value. Shades of cerise, white and EVENING IN PARIS Blue have been skillfully interwoven to insure immediate attention at the consumer point of sale.

STOPETTE—3

Consumer research indicates when people feel they have become immune to one deodorant, they switch to another. Now Stopette offers two distinctively different roll-ons, Clear Blue Liquid and New Pink Lotion Deodorant and Anti-Perspirants. Because each formula is unique and different in action and protection, they offer customers the opportunity to switch deodorants whenever necessary, confident that they will have the two types of security they insist upon.

SHULTON—4

Now-into-spring impetus is provided by a special introductory offer on a new item in the line—Friendship Garden Hand and Body Lotion. The new lotion is pastel-green in color, with a delicate touch of the clean, fresh bouquet of Friendship Garden. It comes in a beautiful hob-nailed

4

5

6

bottle with plastic push-button dispenser and will retail at $1.00. Two of these 6 ounce bottles will be banded together attractively at a special introductory offer of $1.50, plus tax.

LENTHERIC—5

Beautifully presented, the new 3 oz. Mist is in a colorful, elegant, new taper tall, red lilac-toned flacon with a gleaming gold cap. The plastic coated flacon has an aerosol spray, and just the slightest finger-tip pressure, creates a delightful aura of Red Lilac Mist. The Mist Falcon is magnificently packaged. The Lentheric logo is repeated as a pattern over the background color of red lilac and an individually colored elegant embossed ribbon, stamped with a regal seal, appears on the package.

NORTHAM WARREN CORPORATION—6

For the past five years Northam Warren Corporation, manufacturers of the Cutex and Odorono preparations, have successfully introduced permanent counter display units for the retail drug trade. The Cutex FASHION FAIR sets a new standard for cosmetic merchandising. Constructed of plastic on a framework of steel this unit is light in weight and compact in size—measuring only 20½" x 10" x 24½". Every possible device has been employed to show the colorful Cutex products to the best possible advantage.

COTY—7

A Special Introductory offer from COTY, INC., features "Air-Spun" Face Power plus a trial size COTY "24" Lipstick both for only $1.35 plus tax. The offer, available in 9 color-matched combinations, is designed to introduce more women to COTY "24" Lipsticks. Included as merchandising aids are a full color counter card and window streamer.

HOUBIGANT—8

Houbigant adds Satin Smooth Bath Oil to its Quelques Fleurs line. This unique formula contains beneficial oils and emollients that help prevent and correct dry skin. For its introduction a complimentary one ounce bottle will accompany the regular four ounce size, enabling customers to try this new product. If, for some reason, they are not satisfied with it, they can return the large unused bottle for the full purchase price.

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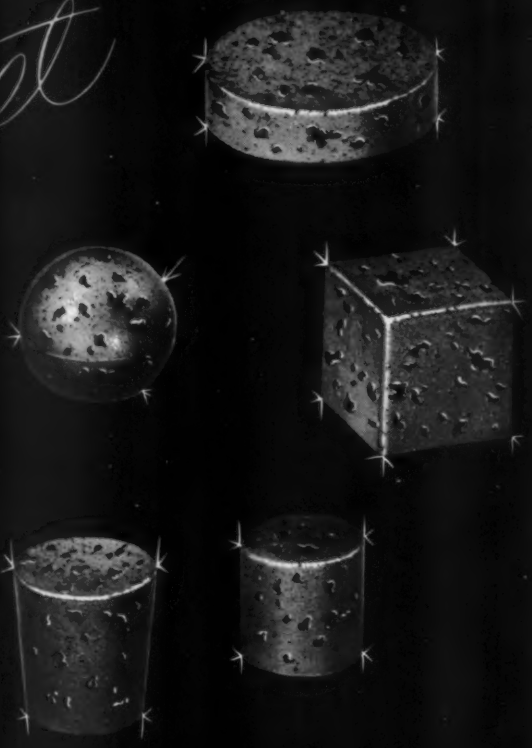
Reap Sales Gold with the New Richford Metallic Finishes!

"Gold Nugget"



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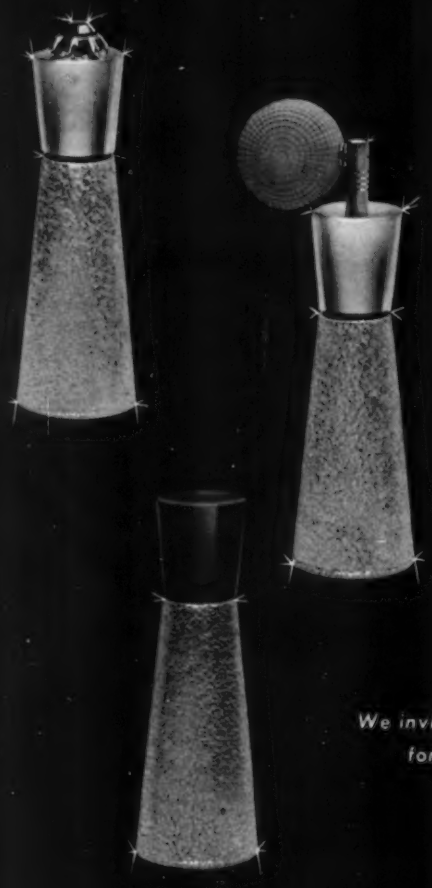

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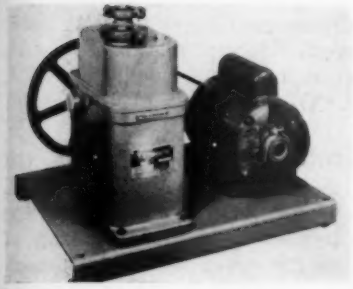


Vacuum Pump

Leybold Rotary Gas Ballast Vacuum Pumps are now being distributed in North America by Arthur S. LaPine and Company. Manufactured in West Germany by E. Leybold's Nachfolger, these vacuum pumps are equipped with a gas ballast device that prevents condensation of vapor in the pump before it can occur. They have evolved from designs of Gaede, the outstanding figure in modern vacuum pump invention.

Models available from Arthur S. LaPine and Company include single-stage pumps, and pumps with two stages in series. The single-stage pumps can attain an ultimate vacuum of 2×10^{-3} millimeters of mercury, and the two-stage pumps an ultimate vacuum of 2×10^{-5} millimeters of mercury. Both single- and two-stage pumps are available in two sizes: one with a speed of 33 liters per minute, and a larger size with a speed of 100 liters per minute. All are oil-sealed rotary vane vacuum pumps and can be operated with or without the gas ballast device. **Arthur S. LaPine and Co.**

Air Compressor

Announcement has been made of a complete line of portable, oil-free, piston-type Winslow Air Compressors by the Winslow Manufacturing Corporation, a subsidiary of the Conax Corporation.

The design of these Winslow Air Compressors (patents pending) insures maintenance-free operation by eliminating lubrication and diaphragms that rupture. The non-lubricated piston includes a specially compounded Teflon cup backed up by a silicone O-ring. Cylinder liner is made from corrosion proof and wear resistant 304 stainless steel. Aluminum alloy ball seating against silicone in the check valve insures long life under adverse conditions.

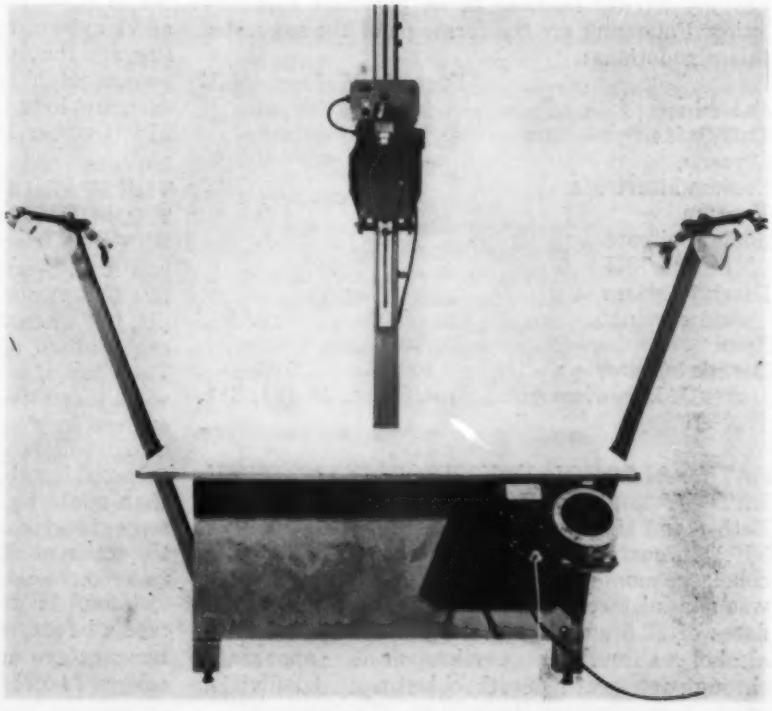
Another design feature is the light weight—only 18 pounds including motor. Winslow Air Compressors are only 10" long x 5¾" wide x 19½" high. Motor is ⅛ HP, 115 volts AC (3 amps) induction type and is equipped with standard 8 foot heavy duty plug-in cord with thumb switch. **Winslow Manufacturing Corp.**

Planetary Camera

A new microfilm package plan that combines a camera, film, Universal Processor, Uni-Kards, and reader has just been announced by Remington Rand Division of Sperry Rand Corporation. Known as the Film-a-Record Micro-Station Package Plan, it actually constitutes a complete industrial and engineering microfilm department.

The camera—the F36.1PL—is a power-driven, 9-position, planetary unit which microfilms large engineering drawings rapidly and economically. Document sizes range from 15" x 21" at a 12-time reduction, up to 36" x 47" at 29 times. A new, easy-to-read, accurate light meter is included.

The microfilm processor—the Unipro Microfilm Processor—is a new type that automatically develops, fixes, washes, and dries 16 mm, 35 mm and 70 mm film interchangeably of any length up to 100 feet. Designed to be loaded and operated in normal light, with automatic controls to make operation simple, 100 feet of film can be completely processed in less than half an hour. All necessary accessories are included with the processor. **Remington Rand.**



GREATER STABILITY FOR CALAMINE LOTION. Effects of Electrolytes on the Stability of Zinc Oxide, Suspensions, Koh Y. and Hopponen R., Drug Standards, 27:21 (Jan-Feb), 1959. (School of Pharmacy, University of Kansas, Lawrence, Kans.) A study is made of the effects of a number of salts of citric, tartaric, succinic and malic acids on the stability of the zinc oxide suspensions. Because of certain disadvantages found in the official Calamine Lotion, the above study was extended to develop a calamine lotion formula possessing more advantages over the present official formulation. To simplify the procedure and reduce experimental settling time, zinc oxide suspensions were used in a 10 percent concentration. Results of tests indicated that citrates and bitartrates in the absence of any other suspending agents markedly reduce the settling rate of zinc oxide suspensions. In the study, the above stabilizing salts were also combined with various suspending agents. Results indicate that citrates and bitartrates reduce the settling rate of zinc oxide with Veegum. Extension of the study indicated that the use of 1 percent sodium carboxymethylcellulose and 0.5 percent of Veegum as suspending agents resulted in an excellent calamine lotion. Following are the formulas of the suggested calamine lotions:

	Formula A	Formula B
Calamine	8	8
Zinc Oxide	8	8
Glycerin	2	3
Sodium bitartrate	1	
Veegum	1	0.5
Sodium citrate	0.25	
CMC type 70H		
Dioctyl sodium sulfosuccinate	0.03	0.05
Span 20	0.1	
Distilled Water q.s.	100	100

Henry J. Derewicz. Am. J. Hos. Phar., *16* (6), 311, (1959).

BATYL ALCOHOL, ERYTHROPOIETIC STIMULATORY ACTIVITY OF. J. W. Linman, F. H. Bethell and M. J. Long (J. Lab. clin. Med., 1958, *52*, 596.) In controlled experiments, racemic batyl alcohol, the monoglycerol ether of *n*-octadecyl alcohol, was administered subcutaneously to normal rats in doses of 12.5 and 25 mg. daily for 4 weeks. Batyl alcohol stimulated erythropoiesis apparently through accelerating erythroblastic cellular division but without associated augmentation in haemoglobin synthesis. This response was manifested by erythrocytosis due to microcytes with decreased osmotic resistance, reticulocytosis and myeloid erythrocytic hyperplasia. The substance also stimulated thrombopoiesis and probably granulopoiesis. The chemical, physical and physiological characteristics of batyl alcohol are similar to those of the thermostable, ether-soluble plasma erythropoietic factor, indicating that they may be the same or related compounds. The authors suggest that all aspects of myelopoiesis may be under the influence of humoral regulatory mechanisms and that batyl alcohol, produced in yellow bone marrow, may be of primary importance in such a system. Thru J. PHARM & PHARM COL, *11*, 8, 505 (1959).

THE PREPARATION AND EVALUATION OF SOME PHENOLIC ETHERS AS ANTIFUNGAL AGENTS by L. V. Coates, D. J. Drain, F. June Macrae and K. Tattersall.—Routine screening of compounds for fungistatic activity had previously shown 2-n-amyloxybenzamide to be the most active of a series of salicylamide derivatives. This work has been extended to cover corresponding *meta* and *para* alkoxy benzamides which have been shown to be considerably less active than the *ortho* derivatives described in an earlier paper. In view of the high *in vitro* fungistatic activity of the 2-alkoxybenzamides, a series of related 2-alkoxy compounds, in which the amide group was replaced by other carbonyl radicals, was prepared and many of these also showed pronounced fungistatic properties. 2-n-Amyloxyacetophenone was the most promising of the compounds examined, and together with 2-n-amyloxybenzamide has been subjected to more detailed biological examination. Data presented on the *in vivo* antifungal activity and toxicity of 2-n-amyloxybenzamide and 2-n-amyloxyacetophenone suggest that suitable formulations of these compounds might be of value in the treatment of human dermatophyte infections. Thru *The Pharm. J.* 183, 215 (October 10, 1959).

THE STABILITY OF THIOGLYCOLLATE SOLUTIONS, PART II. Miscellaneous Factors Associated with the Oxidation and Stability, By A. M. Cook and K. J. Steel. The rate of oxidation of thioglycollate in aqueous solutions increases with increasing pH, but when dextrose is present, neutral solutions are oxidised more rapidly than alkaline solutions. The effect of sodium metabisulphite on the oxidation was indecisive. Boiling thioglycollate solutions evolved hydrogen sulphide. Heating old solutions of thioglycollate caused regeneration of the oxidised material but the extent of this regeneration was less than might have been expected. A yellow colour in some thioglycollate solutions is believed to be due to the action of alkali on the thioglycollic acid. The tetracarboxy acid occurring in samples of the acid was isolated. It is recommended that thioglycollate media be stored in air-tight containers at as low a temperature as possible. J. Pharm. and Pharmacology, *11* (7), 434.

SPEAKING FROM ENGLAND

JOHN BERNARD WILKINSON, B.A., B.SC., F.R.I.C. *became Research Manager of the Toilet Preparations Development Unit of Unilever Ltd., in June, 1957. Before taking up his present appointment, he had been, successively, technical director of Joseph Watson and Sons Ltd., Leeds, and technical director of A.&F. Pears Ltd., Isleworth. He is a member of the Council of the Society of Cosmetic Chemists of Great Britain and was one of the two British delegates to the International Federation of Societies of Cosmetic Chemists.*

Glycerine IN SKIN CREAMS AND LOTIONS

In considering the formula for a toilet product, we must look at the product as a whole, including the package, against the envisaged uses of the product as a whole, not just at a single ingredient in isolation. To do otherwise can lead to trouble, both in the plant and in the home.

This becomes very obvious when consideration is given to a 'special ingredient', such as a germicide, added to a product of basically simple use pattern such as a soap, toothpaste or a shampoo. At one extreme, the main object of the operation is to provide a vehicle for the germicide or other special ingredient; in this case the product is built round the active principle and is designed to permit its application and working under optimum conditions. At the other end of the scale, the formula is modified as little as possible from the optimum for its main function so as to permit it to carry the 'plus' ingredient to the greatest advantage. Between these extremes lie clearly many compromises.

Both extremes point the moral that, although one may begin by considering the virtue and properties of one ingredient, the good formulator soon starts thinking in terms of the product as a whole in relation to its projected use. Therefore when we come to the question of glycerine in skin creams it is first necessary to consider the products in question and their uses. For the purpose of discussion, I have confined myself to the product types in Table I, taken generally from European practice, and covering in principle most products generally considered as skin creams or lotions.

Examination of this table, together with the 'characteristics' in Table 2, coupled with the general principles of cosmetic formulation, shows several common ideas behind the formulation of all these creams and lotions. Now consider the role of glycerine as a part of the formula for these product types in the light of the requirements for consumer use. Only when this has been done, is it possible to embark on the preparation of type formulae for the different product classes in a logical manner.

Product Properties

1. Drying-out. There is a general requirement for slow drying-out of the product in the jar. For the general purpose creams, the small sizes of which are often packed in slip-lid cans, this is made possible by use of a water-in-oil emulsion. Typical results below obtained in our laboratories show both the effect of glycerine in a water-in-oil cream and the vast difference in behaviour of two different oil-in-water creams.

Cream Type	Weight loss % in 1 week at 37°C.
General purpose cream (w/o) A (no glycerine)	6.2
" " " " A (+4% glycerine)	3.9
Compare with:	
Vanishing cream (o/w) B	34.8
" " " C	74.0

But, for all types of cream, storage before and during use demands minimisation of water loss. However perfect the closure design, we have to contend with casual deficiencies and incorrect reclosure by the user. Under the worst conditions, cavities can be produced in some types of cream, no-

TABLE I—THE PRINCIPAL TYPES OF SKIN CREAM AND LOTION

Product	Emulsion Type	Phase Proportions		Main Uses
		% oil phase	% water phase	
Foundation Cream	oil-in-water	15–30	70–85	As a foundation for face powders. May also provide colour by means of pigments or soluble dyes.
General Purpose Cream	water-in-oil	35–45	55–65	Foundation, cleansing and skin care; a compromise in efficiency between its various uses.
"Nourishing" Cream	water-in-oil	35–45	55–65	Includes creams containing special ingredients such as hormones.
Cleansing Cream	water-in-oil or oil-in-water	50–65	35–50	Removal of make-up and cleansing of face at night. Normally used in association with tissues.
Night Cream	water-in-oil	65–90	10–35	Overnight treatment, particularly as a corrective for dry skins. May also be used for massage.
Cleansing lotion/milk	oil-in-water	10–30	70–90	Removal of make-up during day. Applied on cotton wool.
Hand cream/lotion	oil-in-water	5–20	80–95	Treatment of dry hands or those damaged by work.
Skin lotion	—	—	100	Astringent or emollient; also a source of fragrance.

tably the traditional, aerated, vanishing cream and in some others a surface crust may form, which then restricts further water loss but is objectionable and unsightly.

A humectant can play a part in reducing these troubles, but do not exaggerate its possibilities. Typical water phases contain nowhere near the glycerine content required for them to be in equilibrium even with higher atmospheric humidities. Added glycerine can however restrict transfer of water vapour to the near-saturated atmosphere above a partially-closed jar and undoubtedly reduces the rate of loss of moisture. Henney, Evanson and Sperandio[1] have published comparative figures for several humectants and point out the influence of water content, humectant content and humidity. Evidence has been given by Rovesti and Ricciardi[2] that sorbitol is more effective in reducing rate of loss of water, but it must be remembered that this is only one of the properties required from a humectant.

In all creams some degree of control in use is necessary, despite the fact that the water content is ultimately required to disappear. In use, the water is either given up to the skin to restore lost moisture (see below), or, having done its job of giving fluidity and spreadability, it dries out onto the atmosphere; in neither case is it desirable for the water phase to disappear too quickly.

2. Skin humidification. The pleasure of a smooth, supple skin and the dislike of a dry-feeling hard skin have been appreciated by the non-experts from time immemorial. The credit goes to Blank[3] for stating clearly the connection between the feel of the skin and its water content. For finding simple practical ways of alleviating the less serious conditions, credit goes to the cosmetic industry, but, it must be admitted, largely by empirical methods. But to-day, with new knowledge, heavy emphasis is being placed by the beauty profession on 'moisturising' with a partial understanding of the old empiricism.

The presence of a humectant in the water-phase would be expected to stabilise the water content during the later stages of absorption or drying-out; and glycerine should fulfil this role well, although satisfying experimental proof is still lacking. The difficulties of work in this field have been well brought out by Powers & Fox[4] and we must surely support their conclusions that 'a great deal of additional study and work will be required'.

3. Lubrication. With all creams and lotions, good spreading is required not only initially but also sometimes during a prolonged working-in. Aqueous glycerine of all strengths provides a subjectively very acceptable medium and has the added advantage of good compatibility with other ingredients; in particular it can help to prevent 'balling' and 'rolling' when these properties are not desired[5] as suggested by Kalish. Furthermore, in lotions, glycerine can provide unctuousness without oiliness; this is of particular advantage in some more specialised products such as after-shave lotions and sunscreens.

4. Viscosity of Water Phase. The lubricant properties of glycerine solutions are allied to those of providing suitable increases of viscosity. For aqueous or aqueous-alcoholic lotions, the viscosity is often required to be controlled at a high enough level for ease in use. In emulsions, the viscosity of the continuous phase plays a part in providing a satisfying 'body' to the product, and especially in the thinner lotions and milks, glycerine can provide this adequately.[6]

5. Emulsion Stability. In emulsified products ingredients giving lubricant properties or increasing the viscosity of the water-phase must not prejudice emulsion stability. Glycerine certainly does not do so. Indeed we believe that in some complex emulsion systems, it may positively promote stability, especially where monoglyceride is used as one of the emulsifiers. In less complex emulsions, increase in stability through glycerine addition may be due solely to an increase of viscosity at the interface.

6. Perfume Stability. All ingredients in a cosmetic must be selected to have the minimum deleterious effect on perfume stability. Glycerine is certainly sufficiently non-reactive to meet this neutral requirement; indeed, probably by virtue of its solvent powers and low vapour pressure, it has some fixative action and is a valuable adjunct for this reason alone.

7. Safety and Mildness. Of necessity no ingredient can be employed which is not safe on the skin in the proportions used, both as in the formula and after drying-out or absorption (a point which is often overlooked). Glycerine meets this requirement.[7]

The hygroscopic nature of pure glycerine has been held to be a disadvantage on the grounds that it might draw water from the upper layers of the skin in order to reach its appropriate equilibrium. (See Powers & Fox[4] and Rovesti & Ricciardi[2]) This seems to me irrelevant since the equilibrium is always approached from the other side.

The relative humidities of the atmospheres in equilibrium with various strengths of glycerine/water solutions are given in a graph by Miner & Dalton,[8] from which the following round figures are taken:-

% glycerine	Relative Humidity
65	70%
80	50%
90	30%

Thus for instance, even in a 70% R.H. atmosphere in the immediate neighbourhood of the skin, the glycerine solution would need to be initially stronger than 65% before it became hygroscopic. Such concentrations are never used in practice,

TABLE 2—FORMULATION OF SKIN CREAMS AND LOTIONS

Product	Required Characteristics	Typical Ingredients		
		Oil Phase (%)	Water Phase (%)	Emulsifier
Foundation Cream	Must spread easily and give a smooth, non-oily film to hold powder: may be tinted or untinted.	(1) Traditional "vanishing cream" type Stearic acid 13–20	Glycerine 5–10	Potassium or triethanolamine stearate formed in situ.
		(2) Neutral Formulation Waxes or cetyl alcohol 5–10 Mineral oil 10–15	Glycerine 2–5	Polyethylene glycol/cetyl alcohol ether.
General Purpose Cream	Must spread easily and "moisturise". Has fairly fluid oil phase but must not be subjectively too "greasy". Must not dry out too easily if to be packed in slip lid can.	Mineral oil and petroleum jelly 25–30 Lanolin 2–3	Glycerine 5	Wool wax alcohols and/or cholesterol. Nonionic emulsifiers
Nourishing Cream	"Moisturising" quality required, especially if special ingredient is in water phase. Formula must be compatible with any special ingredients used.	A wide range of formula is possible, but generally avoiding extremes. Many of these products may have bases similar to the general purpose creams.		
Cleansing Cream	Must spread easily, be an efficient cleanser and remain oily on skin. Must not dry out in jar as large packs are often used.	Mineral oil 25–35 Lanolin 5–10 Waxes 3–10	Glycerine 5	Wool wax alcohols Nonionic emulsifiers

and until we have further knowledge of dynamics of water transfer process at the skin surface, there seems no reason for doubting the traditional safety of glycerine.

8. Antiseptic Properties & Preservation. Many toilet preparations to-day have antiseptic or even germicidal ingredients added to them—a matter on which comment must be left for another place and time—but the addition of preservatives is almost universal; the need for this has largely arisen from improvements in cosmetic formulation. Many of the older creams made with saponaceous emulsifiers needed relatively little preservation because they provided a mildly hostile environment for most microörganisms; unfortunately these creams were also mildly irritant to a few sensitive people. Products to-day tend to be "kind to skin—kind to bacteria", and we have thus new and sometimes severe problems of preservation on which much has already been written elsewhere. (Particularly see 'American Perfumer' Documentary on Preservatives and Anti-oxidants, January & February issues, 1959.[12])

It is thus a desirable feature of any ingredient chosen for other purposes that it shall also have some antiseptic or bacteriostatic properties.[13] Barr & Tice[9] have shown that most humectants have such properties but only at concentrations high enough for a presumed cosmetic action to be effective, such concentrations occur in toothpaste formulae, but not usually in skin cream water phases. However we do know that glycerine does not inactivate preservatives, which is more than can be said for many ingredients.[13]

Product Formulation. The principles of product formulation require us to select ingredients firstly for their positive qualities given the required properties and secondly for their neutral qualities of non-interference with the remainder of the system. It thus becomes clear that it is advantageous to include glycerine in substantially all skin creams and lotions at levels to be chosen according to requirements. Omission of glycerine or use of other humectants and/or thickeners can provide different properties which may in some particular instances be desirable, even at the expense of other desirable qualities, but these specialised cases cannot be dealt with in a generalised study such as this.

Every cosmetic chemist will have his own formulae for the products with which he is particularly concerned, but it may be helpful to give skeleton formulae for each of the product types given in Table I if only to indicate the levels of glycerine recommended. Most of these are to be found in various forms in published sources and all are well established in practice with their appropriate perfumes and colours; all formulae must always be read with the reservation that perfumes and colours, as well as details of manufacturing technique, can affect some of the properties, notably stability, appearance and texture. Many variations are possible on these skeletons particularly by use of various branded emulsifiers and emulsifier combinations, for information on which current literature should be consulted. The figures given in Table 2 are only quoted to indicate the different glycerine levels which have been found to be effective in practice and not to provide a complete cosmetic formulary.

SUMMARY. Consideration has been given to the user properties and requirements of the principal categories of skin creams and lotions. It has been shown that the properties of glycerine as an ingredient are such as to make its inclusion very desirable in products of this type. An indication is given of suitable proportions of glycerine in various types of product. A list of references is available upon request from the Glycerine Producers' Association.

TABLE 3—TYPICAL INGREDIENTS

Product	Characteristics	Oil Phase	Water Phase	Emulsifier
Night Cream	Firm consistency required if used as massage cream; should have "moisturising" properties.	Petroleum jelly and mineral oil 20–30 Waxes 10–15 Lanolin 5–10	Glycerine 2–5	Beeswax-Borax
Cleansing lotion/milk	Viscosity depends on intended method of use. Must remove make-up efficiently and should not leave the face too greasy.	Mineral oil 5–25 Waxes 1–5	Glycerine 3	T.E.A., stearate or oleate in situ.
Hand cream/lotion	To be "moisturising" and must spread well and not leave hands too greasy.	Lanolin 1–2 Cetyl Alcohol or waxes 2–5 Mineral oil 3–10	Glycerine 5–8	T.E.A. stearate
Skin lotion	Good control of spreading may be required in addition to specific properties such as emollience, astringency, etc.	—	Glycerine 5–25 Alum if required Gums to required viscosity	—

In all cases, water to 100 after inclusion of emulsifier, perfume and preservatives.

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COMPATIBLE. The solvent power, miscibility and compatibility of glycerine give the formulator an extended range of materials with which to work.

MOISTURIZES. Glycerine attracts moisture and holds it in the product and on the skin. It promotes softness, flexibility, creaminess and long shelf life in countless formulations.

NONTOXIC. The safety of glycerine on and in the human body has been established through generations of use as well as by supporting clinical data. Glycerine and mono- and di-glyceride emulsifiers have been listed by the F.D.A. as "generally recognized as safe" as used in foods.

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COMPLETE INFORMATION

Our 18-page booklet, "Glycerine Properties • Reactions • Performance", offers full information to anyone interested in glycerine. We'd be glad to send you a copy. Address: Glycerine Producers' Association, 295 Madison Avenue, New York 17, N.Y.

NOTHING TAKES THE PLACE OF . . .
Glycerine

..NEWS AND EVENTS...NEWS AND

Paris American Club Elects Gregory Thomas

H. Gregory Thomas, president of Chanel, Inc., was elected president of the Paris American Club at a recent luncheon at the Pierre Hotel in New York. He succeeded Thomas Koerner of Haskins & Sells. The Paris American Club is devoted to strengthening Franco-American economic and cultural ties between American businessmen active in Paris and French businessmen active in New York.

Industry Urged to Use TGA Standards Service

S. L. Mayham, Executive Vice President of the Toilet Goods Association, points out that the recent so-called "Television Scandals" have brought about the exertion of pressure upon the Federal Trade Commission to check on the advertising methods and claims of all industries. Pressure is now developing from the House of Representatives and the Senate and the Trade Commission is particularly susceptible to pressure from these bodies since it must secure its appropriation from them. Additional members have been added to the staff of the Commission to check magazines and newspapers for advertising and to monitor radio and television programs.

"Under these circumstances," Mr. Mayham said, "I would again impress upon members of the industry that the services of the Board of Standards of the TGA are available for a pre-check of advertising claims and programs as well as labeling. Some months ago we extended this service to non-members as well as to members and this extension still stands. In addition, we are prepared to scan television spots and commercials if arrangements can be made for them to be shown in New York. The operation is completely secret and no competitor will ever know anything about it, even the fact that the copy has been submitted to us for review."

Mr. Mayham continues, "Our record so far is 100% and no labeling or advertising copy which we have reviewed has ever been made the subject of a complaint by either the Food and Drug Administration or the Federal Trade Commission."

New York S.C.C. Hears Dr. Paul Becher

Dr. Paul Becher of the Atlas Powder Co. has again addressed the N. Y. Chapter of the SCC on the subject of the HLB approach to emulsion stability. This paper was presented at the first monthly meeting on January 6, and was augmented by a color film as well as slides.

Dr. Becher presented some of the background of the search for a correlation between HLB and some fundamental property of emulsifiers, leading to the present study of the spreading coefficient between two liquid phases.

The technique was beautifully demonstrated by Dr. Becher with his film.

THE MARGARET BOURKE-WHITE STORY

Following the January 3rd NBC network telecast of the first in the "Breck Sunday Showcase" TV series of "Specials," "The Margaret Bourke-White Story," a reception was held in New York City for the show's stars and others connected with the presentation. Shown, left to right, at the reception are: Mrs. Edward J. Breck, Edward J. Breck, President of John H. Breck, Inc., Miss Margaret Bourke-White, renowned woman photographer after whom the show was named, and Alfred Eisenstaedt, famed candid photographer and long time friend of Miss Margaret Bourke-White. In the television presentation "The Margaret Bourke-White Story," the part of Miss Bourke-White was played by Teresa Wright, noted film star and Mr. Eisenstaedt's role was taken by Eli Wallach.

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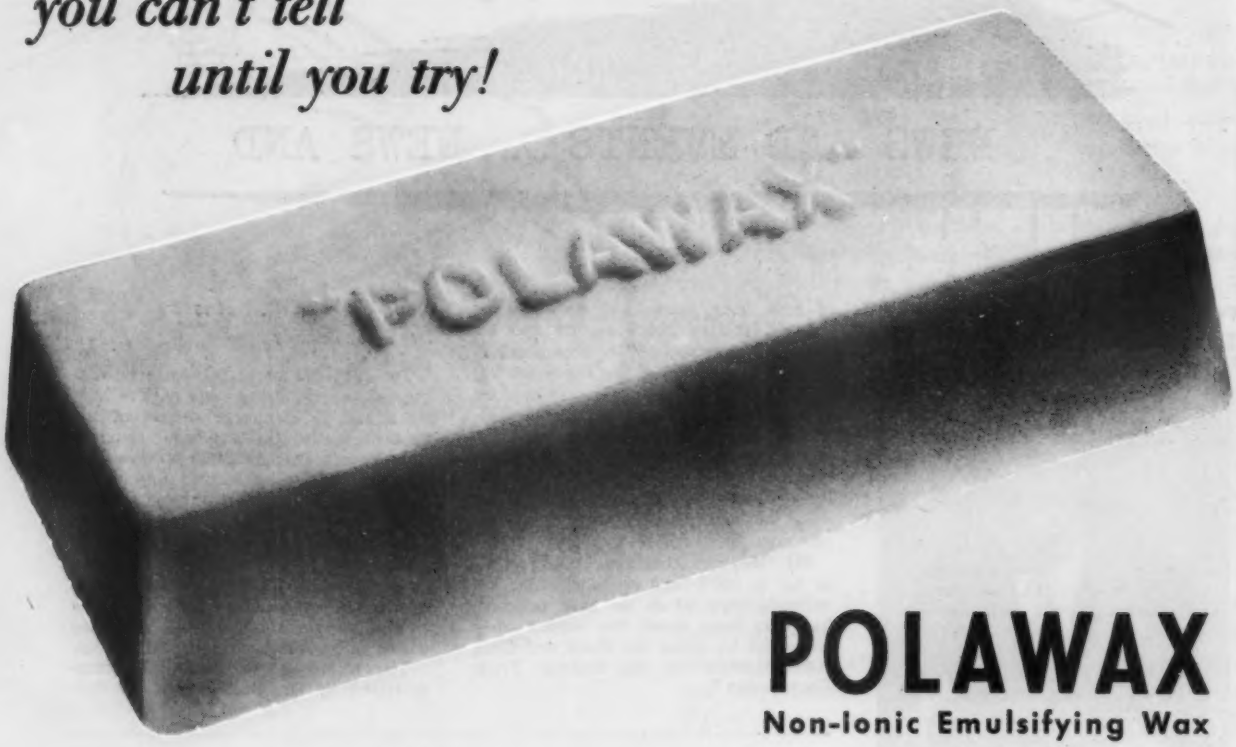

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DESIGNED & EXECUTED BY ALEXANDER STEELL ADVERTISING INC., HEMPSTEAD, N.Y.

Max Factor & Co. held its annual sales meeting, for 1960, on January 4 at the Roosevelt Hotel in Hollywood, with a record turnout of more than 200 of the firm's United States sales representatives and home office executives in attendance.

Max Factor Holds National Sales Meeting

Culminating its golden anniversary year with the biggest and most successful sales record in the company's 50 year history, Max Factor & Co. launched its national sales meeting on January 4 at the Roosevelt Hotel in Hollywood, with the firm's entire United States sales force in attendance.

Representing the largest gathering ever to attend a Max Factor sales meeting, a record turnout of more than 200 sales, advertising, and merchandising personnel, including home office executives, were on hand for the day-long session, which was presided over by Lee Rosene, the company's director of United States sales.

Alfred Firestein, Vice President and Director of United States Marketing, gave a brief resume of the past year's outstanding sales activities and presented a detailed explanation of the company's enthusiastic marketing outlook for the coming year.

Chester Firestein, the firm's Director of United States Merchandising, then delivered a key address which outlined the themes of Max Factor's major promotions for the first six months of 1960.

Coordinated under a colorful and inspiring "Golden Sixties" theme, the meeting was highlighted by the presentation of a hard-hitting sales program that featured a series of new product innovations and high-fashion make-up concepts. A month-by-month dramatized preview of all sales, advertising, and merchandising aids was uniquely presented and color slides were used to effectively show closeups of print advertising and merchandising displays. Also previewed were screenings of the complete line-up of Max Factor television commercials to be seen during the coming months.

Another highlight of the meeting was the presentation of the company's annual "Salesman of the Year" awards to the salesman in each division having the best overall sales performance.

A. Lee Caldwell Named P.C.P.S. Trustee

A. Lee Caldwell, head of the product technical service of Eli Lilly and Company, pharmaceutical manufacturers of Indianapolis, has been named a member of the Board of Trustees of his Alma Mater, the Philadelphia College of Pharmacy and Science. Mr. Caldwell will complete the unexpired term of the late Dr. Adam H. Fiske, who, just prior to his death on August 25, 1959. had retired from the post of Vice-President of the Lilly firm.

CHEMISTS HONOR MISS FLORENCE E. WALL

Miss Florence E. Wall, consultant (cosmetics) and writer, received Honorary Membership in The American Institute of Chemists, Jan. 7, 1960, at a meeting sponsored by the New York Chapter of the Institute. Dr. Wayne E. Kuhn of Texaco Inc., president of the Institute, presented the certificate of Honorary Membership.

The citation to Miss Wall reads: "In recognition of active devotion throughout the life of the Institute. The ways in which she fostered it in its early years and continued to serve it later are innumerable. The Institute takes pride in the first Honorary Membership to be conferred on a woman chemist."

TOP YARDLEY SALESMEN HONORED

Winners of the Yardley of London annual sales contest are honored at a banquet given during the company's sales conference in Nassau, Bahamas, late December. Philip C. Smith, president, (center) awards the President's Cup to George Hattie (left) for top sales performance in 1959. Harold Gerard (right) was runner-up.

Mr. Hattie, who handles the San Francisco territory, and Mr. Gerard, of the Detroit territory, will represent the American company at the Yardley & Co., Ltd. International Sales Meeting to be held in London in March.

Southern Illinois Offers Advanced Cosmetology Classes

Plans for the sixth annual School of Advanced Cosmetology at Southern Illinois University—first of its kind in the world—were announced today by Harry B. Bauernfeind, assistant dean of the Division of Technical and Adult Education.

The school, open only to cosmetologists with licensed practical experience, will be held from July 24 to Aug. 6, and is sponsored by the Illinois Hairdressers and Cosmetologists Association in cooperation with SIU.

"Many hours are spent working with hair swatches and live models, giving cosmetologists actual experience so they may apply the scientific knowledge gained in the school to their profession," Bauernfeind said. Enrollees will have laboratory sessions in hair shaping, hairstyling, haircoloring, color mixing, shampoo chemistry and physics of hair.

CALIFORNIA COSMETIC ASSN. ELECTS NEW DIRECTORS

C C A Members of Board of Directors (l. to r.) Dr. Paul Jewel (Max Factor & Co.); Alan J. Coghlan (Nethercutt Laboratories); Arnold L. Lewis (Studio Cosmetic Co.); John Danley (Merle Norman Cosmetic Co.); Edward Costa (Kolmar Laboratories, Inc.); and Honorary Director Edward H. Southwell (E. H. Southwell Co.). Other Directors, not in photo, are Paul Klein ("42" Products, Ltd.) and W. J. Hickman (Rexall Drug Company).

Fries & Fries, Inc. Marks 106th Year

Fries & Fries Inc., of Cincinnati and New York, celebrates this March, its 106th anniversary of service to American industry. Established in 1854 by the Fries family, the company has grown from a small manufacturer of flavors, extracts and caramel colors to one of the best-known suppliers of essential oils, aromatics, flavors and perfume bases in the country. Three generations in the industry, plus an ever-increasing emphasis on the role of basic research and development, have given Fries & Fries the two essentials of good business management, long experience and progressive outlook.

Labline, Inc. to Sponsor Annual Award

Labline, Inc., manufacturer of laboratory instruments, apparatus and equipment, has been accepted by the American Chemical Society to sponsor an annual award in the fields of chromatography and electrophoresis, Alexander I. Newman, Labline president, has announced.

Newman said the award was accepted by the ACS to recognize outstanding contributions in the fields of chromatography and electrophoresis, with particular consideration given to development of new methods designed for accuracy and speed.

The award will consist of $1,000 and a plaque, with travel allowances of $150 for the recipient, who is to receive the award at a meeting designated each year by the ACS.

Albert L. Elder, president-elect of the American Chemical Society, has appointed a Canvassing Committee which will select the winner of the first annual award in 1961.

Toni Again Sponsors Mrs. America Contest

The Toni Company, manufacturers of hair care, beauty and cosmetic products, has renewed its contract to co-sponsor the 1960 Mrs. America Contest, it was announced by Bert Nevins, President of Mrs. America, Inc., originators of the competition.

Toni once again will sponsor a hair styling event, using Adorn hair spray. The 22nd annual national finals are scheduled for Fort Lauderdale, Florida, June 2-14th. Gas utility companies, department stores, shopping centers and Radio and TV Stations throughout the country will hold eliminations to select the outstanding homemakers from the 50 States and District of Columbia, each of whom together with her husband will be flown to Fort Lauderdale for the finals.

The Toni Company will award the new Mrs. America U.S. Savings Bond and a lifetime supply of its products. In addition to an all-expense paid two week Florida vacation each State Winner also will receive a year's supply of Toni products.

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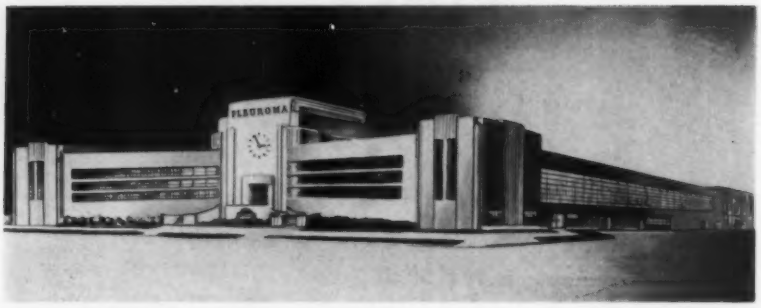
FLEUROMA GETS NEW BUILDING



Fleuroma, Inc. has purchased the land and building at 43-23 Dreyer Avenue, Long Island City 1, New York, and will redesign and use this 90,000 square feet of space as their main plant and central administrative offices. Special care is being given to the design of extensive Perfume Laboratories for the Fleuroma creative perfume staff. The firm will move from its present quarters on 38 West 21st Street, New York, N.Y. in the late Spring of 1960, after the new space has been readied.

Am. Society of Perfumers Elects New Officers

The following Officers and Directors were elected by the American Society of Perfumers, Inc. at their Annual Business Meeting in January: Bernard Polak, Polak's Frutal Works, President; William H. Barlow, Orbis Products, Inc., First Vice President; Herbert Sommer, Prince Matchabelli, Second Vice President; Mrs. Dorothy A. Douglass, Shulton, Inc., Secretary; Edwin D. Morgan, Jr., Lever Brothers Co., Treasurer.

The Board of Directors includes: Dr. Oliver L. Marton, Shulton, Inc., Chairman; Bernard Polak; William H. Barlow; Herbert Sommer; Mrs. Dorothy A. Douglass; Edwin D. Morgan, Jr.; Walter Lengsfelder, Fleuroma, Inc.; Elmer L. V. Sulik, van Ameringen-Haebler Div.; John Hancock, Warner-Hudnut; Edward J. Shuster, van Ameringen-Haebler Div.

Novel Glass Container Offered

A new un-coated glass bottle with intricate convolutes and available with a micro-mist valve has been introduced by Par Industries, Inc. and Old Empire, Inc. Old Empire will offer the container to the east and Par will make the bottle available to the cosmetic industry in the 13 western states. It is available with an overcap that covers the valve and fits flush with the top of the bottle.

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Maurice Cola Visiting U.S., Mexico

Maurice Cola, consulting chemist for Roure duPont, arrived in New York early this month for a few days visit with his many friends here. Mr. Cola's itinerary includes an extended trip through Mexico and Central America before his return to Paris.

Dr. Gould to Head Colgate Grant Research

The appointment of Dr. David H. Gould to the newly-created position of Administrator of Grant Research at the Colgate-Palmolive Laboratory for Oral Health Research has been announced by Dr. Joseph H. Brant, Director of Corporate Research and Development.

Dr. Gould will be responsible for the academic and industrial studies in the oral health field undertaken across the country with the support of the Laboratory.

Dr. Gould went to Colgate-Palmolive from the Schering Corp. where he had served as Administrator of Extramural Scientific Research for the past two years. Prior to that assignment, he was a senior research chemist.

Jennings Named VP of National Laboratories, Inc.

Norman W. Jennings has been promoted from marketing administrator to vice president of marketing for National Laboratories, Inc. National Laboratories is a wholly-owned subsidiary of Lehn & Fink Products Corp.

In his new post, Mr. Jennings will direct marketing and sales for both National Laboratories and the Lehn & Fink Professional Division. National Laboratories manufactures industrial maintenance chemicals. The Professional Division distributes disinfectants to hospitals and other institutions.

Mr. Peck, president, also announced the promotion of William A. Thompson of Tulsa, to general sales manager of National Laboratories. He was formerly South Central Region manager and has been with the firm since 1950 in various field executive positions. He will direct the activities of more than 200 sales representatives in 49 states.

P&G Announces 6-Months Earnings Rise

The Procter & Gamble Co. has reported consolidated net earnings of $52,959,794 for the six months ended December 31, 1959. These earnings are equal to $2.56 per share. The current six-months earnings are up about 22 percent from those reported for the same period in 1958. Earnings in the 1958 period were $43,115,942, equal to $2.09 per share.

In the six months reported, provision has been made for United States and foreign income taxes of $50,618,000.

Emery Research Adds Three

Additions to the Research Department staff of Emery Industries include Herbert G. Rodenberg, Paul J. Kemper, and John F. Morrow. In making the announcement, Dr. Charles G. Goebel, Emery's Research Director, stated that their appointments are part of an overall expansion of Emery's technical staff to maintain and exploit the company's position in the Oleochemical field.

Obituary

James Martin, perfumer and compounder for Albert Verley and Company for the past ten years, died suddenly at his home in Union, N.J. on January 24, 1960. Mr. Martin, who leaves a wife and two children, has been active in the perfumery field for many years.

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ESSENTIAL OIL ASSOCIATION ELECTS NEW OFFICERS AT 29TH ANNUAL MEETING

Officers and members of the Executive Committee include, from left to right: Gert Keller of Schimmel & Co.; Pierre Coutin of Coutin Associates; Ed Langenau of Fritzsche Brothers; Ed Manheimer of J. Manheimer; Robert E. Horsey of Givaudan-Delawanna; Frank Dittrich of Ungerer & Co.; Mr. F. K. Goudsmit of van Ameringen-Haebler; and Victor G. Fourman of Syntomatic.

Newly elected officers of the association, left to right, Ed Manheimer, secretary-treasurer; Ed Langenau, first vice president; Robert E. Horsey, president; and Frank Dittrich, second vice president.

Enjoying cocktails prior to the annual banquet, Victor Fourman, Jim Miller and Joe Fein.

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Pierre Parchois Becomes Synarome Vice President

Pierre Parchois

The Synarome Corporation of America, in conjunction with Synarome, Sarl-Paris, announces the appointment of Pierre Parchois as vice president. Mr. Parchois will be in charge of sales in the United States and, as technical advisor, will maintain liaison between American consumers and Synarome-Paris.

Mr. Parchois had been associated with Coty and with the fine chemicals department of E. I. DuPont de Nemours, and is well known for his background in the essential oil industry of Grasse.

Society of Perfumers Schedules 6th Symposium

The 6th Annual Open Symposium of the American Society of Perfumers will be held at the Essex House, New York City, on Thursday, April 28 at 2:00 P.M., followed by a buffet dinner. Walter Lengsfelder is chairman of the committee, which includes Everett Kilmer, Oliver Marton, Harry Saunders and Ed Shuster.

Wrisley Co. Announces Executive Appointments

Eugene F. Bertrand, president of the Allen B. Wrisley Co., has announced appointments to the executive staff of the firm.

The appointments are: Marvin B. Buehlmann as Secretary-Treasurer, John M. Bratton as Assistant to the President, George M. Klaus as Plant Manager, Walter M. Guzy as Purchasing Agent, Leonard G. Wargo as Production Planning Manager, and Marvin Strauch as Manager of traffic, receiving, shipping, and warehousing.

Parry Laboratories Acquires Elmo Cosmetics

Acquisition of the 50-year-old Elmo line of cosmetics was announced February 8 by Parry Laboratories, manufacturers of proprietary and pharmaceutical products.

Alfred Kovnat, Parry vice-president for marketing, announced that Parry plans immediate streamlining of Elmo's more than 200 products as well as introduction of a series of new items to the beauty line. The overall marketing effort calls for modernizing the Elmo package and instituting an aggressive advertising campaign budgeted in excess of $300,000.

Elmo founded in 1907 by two sisters, Mary and Margaret Elmo, who pioneered in treatment line cosmetics and utilization of store demonstrations. From 1930 to the late 1940's, Elmo marketed over 400 products nationally, employing a high-fashion advertising approach.

Cortney Heads Legal Aid Campaign for Funds

Philip Cortney, president of Coty, Inc., is again heading the cosmetics and Perfumes Division of the Legal Aid Society's campaign for funds.

This is Mr. Cortney's fourth consecutive year of raising funds for the Society which provides legal services to those who cannot afford a lawyer. The budget for 1960 calls for $625,000 to serve an estimated 77,000 needy clients in New York City.

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MORGAN BEATTY, NBC NEWSCASTER ADDRESSES CIBS

Ace newscaster, Morgan Beatty, addressed the December meeting of the CIBS, at the Savoy-Hilton Hotel. His topic, which was timely, was "PAYOLA, PLUGS, ETC." Mr. Beatty mentioned that the basis for the present "mess," was due to the lack of judicial rules governing the actions of various federal agencies. His talk, as well as the comments after his talk, were very well received. Shown after the meeting—(l to r) Allen T. Stewart, CIBS' Corresponding Secretary; John Duncan, CIBS' President; Mr. Beatty; Ray Rogers, CIBS' Recording Secretary, and Robert Ring, CIBS' Second Vice President.

Hambley to Guide Aziza Cosmetics Line

Clarke C. Hambley

Clarke C. Hambley, Prince Matchabelli Vice President in charge of Advertising and Promotion, will be in charge of the Marketing of Aziza Eye Cosmetics. He will be responsible for the packaging, promotion, advertising, and selling of the line. Aziza is the most recent cosmetic acquisition of Chesebrough-Pond's and it was purchased to be merged with the Prince Matchabelli operations.

Helene Curtis Inc. Announces Record Earnings

Record net earnings of $1,961,763 for the nine-month period ended November 30, 1959, were announced recently by Willard Gidwitz, president of Helene Curtis Industries, Inc. These are the highest net earnings for any nine-month period in the history of the company. Earnings were up over 35% from $1,445,491 for the same period last year. Total sales for the nine-month period were $37,898,972 as compared to $37,398,574 for the same period in 1958. Per share earnings were 99¢ compared to 77¢ on a smaller number of shares in 1958. Total outstanding Class A and Class B shares as of November 30, 1959, were 1,974,235 compared to 1,889,448 as of November 30, 1958.

McMurray Named Secretary of Hoffman-LaRoche, Inc.

The election of Raymond D. McMurray as Secretary of Hoffman-LaRoche Inc., manufacturer of pharmaceuticals and vitamins, has been announced by L. D. Barney, President. Mr. McMurray succeeds Hans H. A. Meyn who has served in this post for nearly 40 years. He is a member of the Bar of the State of New York, the Bar of the State of Ohio, the Supreme Court of the United States, and other Federal Courts and Agencies.

Fragrance Foundation Names Public Relations Counsel

The Fragrance Foundation has announced the appointment of Helen Nash Associates, Inc. as Publicity and Public Relations Counsel. The Helen Nash Office will also act as Executive Director of the Fragrance Foundation's program for increasing communication and exchange of ideas within the industry. A series of luncheon meetings featuring important guest speakers is planned and an evening gala event for all the members is scheduled in the fall.

Swiss S.C.C. to Hold Meeting in March

A meeting of the Society of Cosmetic Chemists of Switzerland will be held March 25 and 26, at the Hotel Schweizerhof in Berne. Lectures and scientific papers will be given by several members of the society and also by foreign guests. Anyone wishing details of the meeting should contact Kurt J. Pfeiffer, 8, Devin Du Village, Geneva, Switzerland.

Shulton Forms Two New Toiletries Research Laboratories

The formation of two new toiletries research laboratories to facilitate the further development of new products for both the domestic and overseas markets has been announced by Mr. George L. Schultz, president of Shulton, Inc.

Mr. Robert L. Goldemberg has been named Director of Toiletries Research for the domestic market. He joined Shulton in 1958 as Project Leader and was named Associate Director of Toiletries Research in April 1959. Before joining Shulton, he was a Senior Chemist with Coty.

Robert L. Goldemberg

Heinz J. Eiermann

Mr. Heinz J. Eiermann has been appointed Director of Research, International Division. He will be responsible for new product development for the overseas markets and the over-all direction of research and control in Shulton's overseas laboratories. He joined Shulton in 1954 as Project Leader and was named Associate Director of Toiletries Research in April 1959. Before joining Shulton, he was associated with Johnson & Johnson in Brazil.

FROM HELENA RUBINSTEIN'S EXHIBITION OF TABLE SETTINGS

The Bristol Blue Table Setting by Helena Rubinstein features part of her great collection of nineteenth century Bristol china, set on a blue tablecloth. The luncheon is her famous 1,000 calory diet: Garden bouillon, broiled chicken, broccoli, new beets, lettuce and celery root salad with Herbal cheese balls and a fresh fruit cup topped off by black coffee.

Chemical Specialties Lab Announces 1960 Catalogue

The Chemical Specialties Research Laboratories announces the availability of their 1960 catalogue listing reports on over 1500 trade-name chemical specialties. Included are reports on cleaners of all types, cosmetic preparations, detergents, waxes, bleaches, polishes and many other household and industrial items.

Chemical Specialty manufacturers who do not have the facilities for making their own analyses obtain these prepared reports inexpensively. Those who do have laboratories use them for cross-checking. In addition, a monthly service which provides five new analyses each month is offered on a subscription basis. Each analytical report provides the subscriber with complete quantitative and qualitative data and an interpretation in terms of commercial ingredients. A price list and catalogue of items reported may be obtained by writing directly to the Chemical Specialties Research Laboratories, Box 33, Ansonia Station, New York 23, New York.

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Emery Adds Two to Sales Staff

L. Paul Dougherty

Jack Doyle

L. Paul Dougherty and Jack Doyle have been added to the Organic Chemical sales staff of Emery Industries, Inc., according to R. F. Brown, Organic Chemical sales manager. Mr. Dougherty will be assigned to the New England sales territory, while Mr. Doyle will cover a territory that includes West Virginia, southeastern Ohio, western Pennsylvania, and western New York State.

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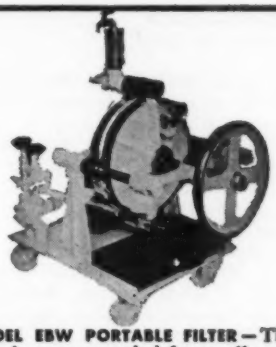

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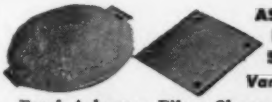

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Edmund Jackson

Edmund Jackson Promoted by Shulton

The appointment of Edmund Jackson as Brand Advertising Manager, a new position, has been announced by F. N. Carpenter, Vice-President of Shulton, Inc. Mr. Jackson will handle advertising for Desert Dri, 3-way Curl Spray, Technique Color-Tone, and another new product.

Mr. Jackson has served as Sales Promotion Manager since joining Shulton in 1957. Prior to joining Shulton, he was an Account Executive with Grey Advertising Agency. Before that he held various marketing and promotion capacities with Vick Chemical Co.

Philadelphia College Faculty To Continue Television Series

Members of the faculty of the Philadelphia College of Pharmacy and Science will offer an entirely new series of television broadcasts in conjunction with the University of the Air, WFIL-TV, Channel 6, Philadelphia, during the second semester, February 2 thru May 24. Broadcast each Tuesday from 11:35 A. M. to Noon, the general theme will be You and Your Health. Registrar John E. Kramer will continue to act as host for the series, and the complete program is as follows: Feb. 2, Dr. Linwood F. Tice, Aspirin—America's No. 1 Drug—Its Use, Misuse, and Hazards; Feb. 9, Dr. Bernard Witlin, Occupational Health; Feb. 16, Dr. Grafton D. Chase, A Spectrum of Health; Feb. 23, Prof. Charles E. Welch, Jr., Health Headlines of the Past; Mar. 1, Prof. Robert E. Abrams, A Needless Waste of Life; Mar. 8, Dr. Robert N. Jones, Action and Reaction; Mar. 15, Prof. Francis M. White, Your Ears and Your Health, Part II; Mar. 22, Dr. Louis Gershenfeld, Poisoning and Infection by Foods; Mar. 29, Dr. Elias W. Packman, Vitamins; Apr. 5, Dr. Alfonso R. Gennaro, Anti-Cancer Chemicals; Apr. 19, Dr. G. Victor Rossi, Arteries—In Health and Disease; Apr. 26, Dr. Warren S. Chernick, Cystic Fibrosis; May 3, Dr. Martin Barr, Antiperspirants and Deodorants; May 10, Members of the Pharmacy Staff, Today's Pharmaceuticals; May 17, Dr. Kenneth E. Avis, Freeze-Drying of Medicinals; May 24, Dr. Ivor Griffith, New Developments in Geriatrics.

Each lecture will be taped and rebroadcast over the same station one week later at 7:20 A. M., and at other times through television broadcasting stations in Binghamton, N. Y., New Haven, Conn., Lebanon, Pa., and Altoona, Pa.

Vanilla Bean Assn. Elects New Officers

The Annual Meeting of the Vanilla Bean Assn. of America was held last month at the Gramercy Park Hotel in New York. The following officers were elected for 1960: President, E. Vina; Vice President, J. Schmidt; Treasurer, J. Manheimer. Directors are W. H. Triest, J. Maxwell and H. Salomon.

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PERSONALITIES

Cecil C. Popkin

William C. Mogk

Joseph E. Hedges

Cecil C. Popkin has joined Tussy Cosmetics in the newly created post of assistant field sales manager. A specialist in toiletries and drug field sales and marketing, Mr. Popkin will concentrate on field sales problems as part of the announced Tussy major market and sales expansion program.

Frank L. Stamberg has been appointed General Sales Manager at Prince Matchabelli, Inc. He has been associated with Prince Matchabelli for the past five years and prior to that he was with Vick Chemical Co. for three years. For the past year, Mr. Stamberg has been Manager of Brand Operations including polyderm Cosmetics, Simonetta Perfumes, and Black Watch Grooming Aids for Men. He will continue to be responsible for these Brand Operations.

Earl M. Smith has been named manager of the Young Look cosmetic line of the Lehn & Fink Division, Lehn & Fink Products Corp. Mr. Smith was formerly Eastern Area manager for Beauty Counselors, Inc. He has been in direct selling management since 1946 and a large portion of this experience was in the cosmetic field.

Henry W. Cox has been appointed Sales Supervisor of T. H. Wirz, Inc., packaging specialists. In his new capacity he will serve as liaison between both sales and production divisions for all products made by the company.

Jack Barry, television producer and M. C., has been appointed Executive Vice President of the Fragrance Process Co., which specializes in aromatic advertising.

William C. Mogk has been appointed Pacific Regional Manager in charge of all retail and wholesale accounts, by Coty, Inc. Mr. Mogk joined Coty in 1949 and was a senior representative in the Southwest, prior to his present assignment.

Peter C. Hereld

Peter C. Hereld has been appointed Planning Manager of the chemicals group of Sun Chemical Corp. He was formerly executive vice president of Chemo Puro Manufacturing Corp.

Claude A. Crommelin, formerly with N. V. Chemische Fabriek "Naarden" of Holland, is now associated with the essential oil department of George Uhe Co., Inc.

Norman Gordon has been appointed to the sales staff of the Onyx Oil & Chemical Co. He will be assigned to the Chicago office and will call on accounts in Missouri, Kentucky, Kansas, Arkansas and Oklahoma.

Joseph E. Hedges has been appointed area sales representative of a newly formed territory for Chanel. He will represent Chanel in Kentucky, North Carolina, Eastern Tennessee, Virginia and West Virginia.

Dr. Herbert Sheppard has been appointed associate director of biochemical pharmacology at Ciba Pharmaceutical Products Inc. Dr. Sheppard joined Ciba in 1953 as a senior biochemist, the position he has held until his present appointment.

Bernard d'Escayrac, president of Guerlain, Inc., has been elected president of the Perfumery Importers Assn., to succeed the late Maurice Levy.

Sherry D. Stone

Sherry D. Stone has been appointed Public Relations Director and Fashion Coordinator for Lanolin Plus, Inc. Miss Stone, who served as Executive Director of The Fragrance Foundation, Inc., has been a public relations consultant for the past year.

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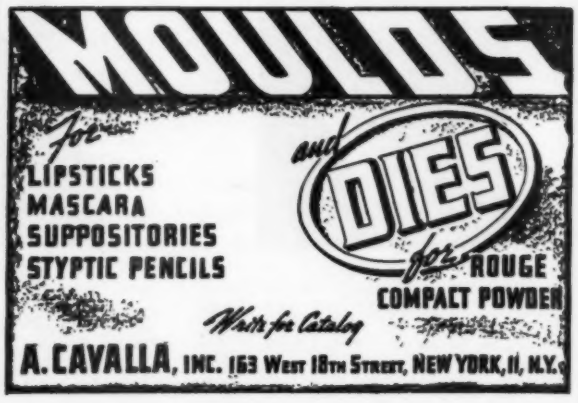

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Index OF ADVERTISERS

Aerosol Techniques, Inc. 79
Allied Chemical Corp., General Chemical Division ..... —
American Aromatics 12
American Cholesterol Products, Inc. 40, 42, 44
American Lanolin Corp. 23
Andersen, Carl N. ..... —

Bedoukian, Paul, Dr. 83
Bertrand Freres ..... —
Bios Laboratories, Inc. 80
Boake, Roberts & Co., Ltd., A. ..... —
Bopf-Whittam Corp. 76

Cameo Die & Label Co. 82
Camilli Albert & LaLoue, Inc. 84
Carr-Lowrey Glass Co. ..... —
Cavalla, Inc., A. 82
Celluplastic Corporation ..... —
Charabot & Co., Inc. ..... —
Chauvet & Co., Pierre 74
Chemo-Puro Mfg. Corp. ..... —
Chiris Co., Antoine ..... —
Citrus & Allied Essential Oils Company ..... —
Classified Advertisements 83
Colgate-Palmolive Company ..... —
Continental Filling Corp. ..... —
Croda, Inc. 70

deLaire, Inc. ..... —
Descollonges, Inc. ..... —
Deutsche Hydrierwerke, G.m.b.H. ... 73
Dodge & Olcott, Inc. 48
Dragoco, Inc. ..... Insert 20-21

Emulsol Chemical Corporation ..... —
Ertel Engineering Corp. 79
Esperis, s.a. 23

Fairmount Chemical Co., Inc. 82
Felton Chemical Co., Inc. ..... —
Fifth Avenue Protective Association —
Firmenich & Co. 14-15
Fleuroma, Inc. 59
Fritzsche Brothers, Inc. .... Insert 35-38

Givaudan-Delawanna, Inc. 5
Glycerine Producers' Association Insert 65-68
Goldschmidt Chemical Corp. ..... —

Halby Products ..... —
Heine & Company ..... —
Hoffman-LaRoche, Inc. 18
Huisking & Co., Inc., Chas. L. ..... —

International Flavors & Fragrances, Inc. 24-25
Ising Corporation, C. E. 82

Katz & Co., Dr. Alexander, Div. of F. Ritter & Co. 77
Kenbury Glass Works 83
Kessler Chemical Co., Inc. ..... —
Knapp Products, Inc. ..... —
Kohnstaum & Company ..... Insert 47
Kolar Laboratories, Incorporated .. 26

Lanatex Products, Inc., The ..... —
Lanitis Bros., Ltd. .. Inside Front Cover
Lautier Fils, Inc. 6
Leberco Laboratories 83
Leonhard Wax Co., T. ..... —
Lueders & Co., George 2

Martinat, Jean Jacques, Dr. 83
Maryland Glass Corp. ..... —
Monsanto Chemical Company ..... —

Naarden ..... —
North Broad Labs 83

Old Empire, Inc. ..... —
Onyx Oil & Chemical Co. ..... —
Owens-Illinois Glass Co. Inside Back Cover

Pacific Vegetable Oil Corp. 73
Parento, Inc., Compagnie ..... —
Parsons-Plymouth, Inc., M. W. ..... —
Penick & Co., S. B. ..... —
P F W 13
Polak & Schwarz International, N. V. —
Polarome, Inc. 74

Reheis Co., Inc. 4
Rhodia, Inc. ..... —
Richford Corp. 62
Risdon Manufacturing Co., The .... —
R. I. T. A. Chemical Corp 16
Ritter & Co., F. 77
Rona Laboratories, Inc ..... —
Rose Oil Products Co. 75
Roure-Dupont, Inc. 17
Ruger Chemical Company, Inc. 74

Schimmel & Co., Inc. 1
Scovill Mfg. Co. ..... —
Shulton Inc., Fine Chemicals Div. .. —
Snell, Foster D. 83
Stepan Chemical Co. ..... —
Stower & Oakley, Ltd. ..... —
Synfleur Scientific Labs, Inc. 8

Thomasson of Pa., Inc. ..... —
Tombarel Products Corp. ..... —

Ungerer & Co. ..... Back Cover
Universal Outlet Co. 82

Van-Ameringen-Haebler, A Div. of International Flavors & Fragrances 24-25
Vanderbilt Co., R. T. ..... —
Van Dyk Company, Inc. 7
Verley & Company, Albert 11
Verona Aromatics, A Div. of Verona-Pharma Chemical Corp. .. 54

Webb & Co., Inc. R. D. 80
Whittaker, Clark & Daniels ..... —
Wilkens Instrument & Research, Inc. —
Will & Baumer Candle Co., Inc. 77

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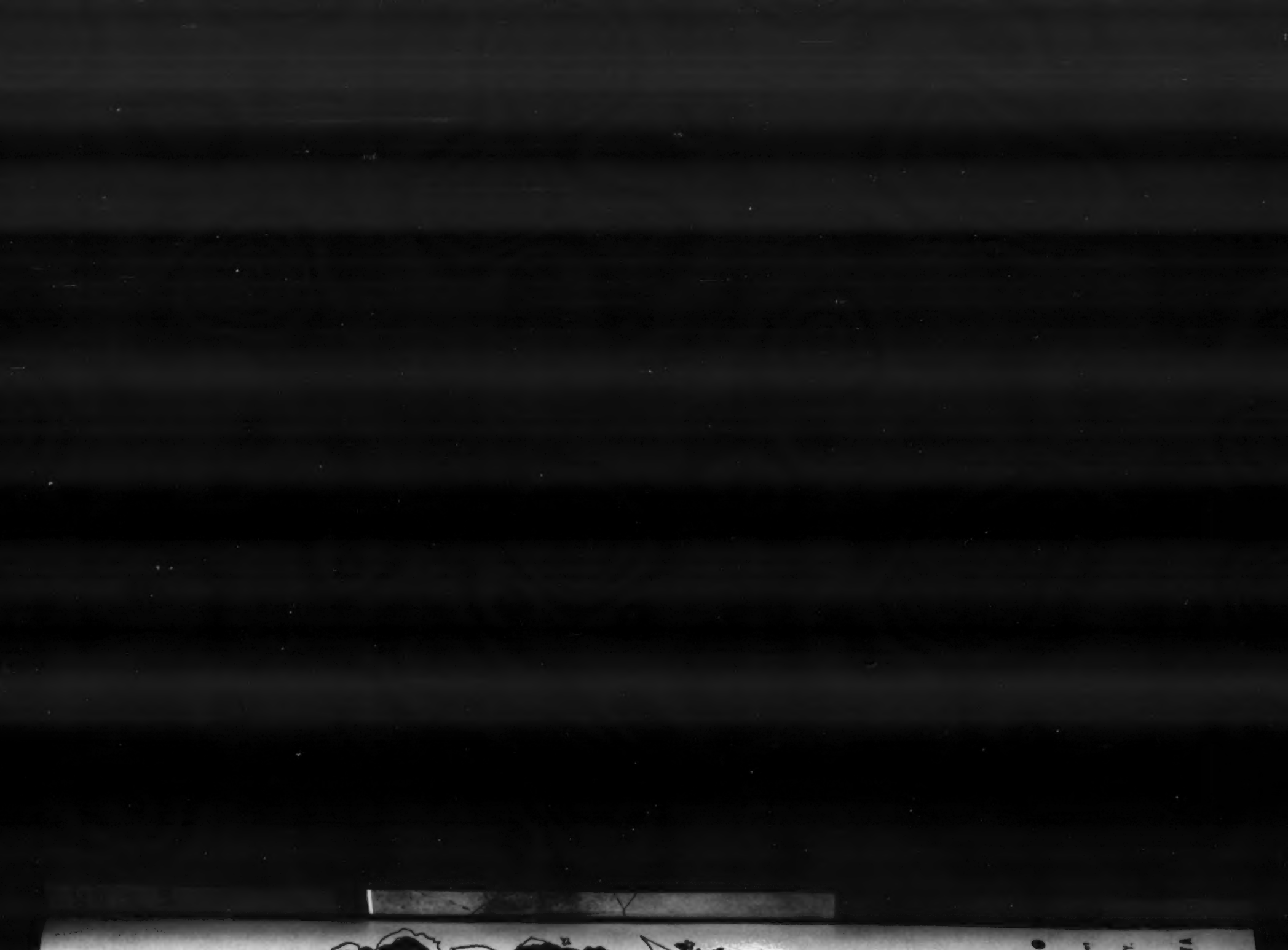
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